

# **'LEAP' Forward: Building a GCAP Generation**

Setting the foundations for the long-term trilateral defence collaboration between Japan, Italy, and the United Kingdom

Alessio Patalano and Peter Watkins

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### **About the Authors**

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# Abstract

The return of war in Europe and of great power competition at the systemic level of international relations is driving the resurgence of multinational defence cooperation to build the advanced capabilities to maintain strategic advantage. This paper investigates one form of such a type of cooperation, the UK-Italy-Japan Global Combat Air Programme (GCAP). In particular, the paper argues that GCAP represents a new form of a 'technology and capability minilateral' that requires particular attention to the development of a wider community of practice within the member countries to sustain this effort over several decades. Large, long-term intergovernmental aircraft projects have existed before – such as Tornado and Eurofighter Typhoon – and have experienced significant challenges, exacerbated by the differing strategic priorities, political cultures, and organisational structures of the participating states. The paper examines past initiatives in mitigating the risks in such cooperative projects to argue that GCAP too would benefit from an analogous initiative. We call this the Learning and Educational Awareness Programme (LEAP), which would sit alongside the main acquisition programme and would seek to develop a community of practice – across the governments, armed forces, and industries of the three countries – to build strategic resilience around the project. The paper offers both the conceptual framework to appreciate the importance of this initiative and an initial roadmap for its adoption.

## What is GCAP and why do we need a GCAP Generation?

Russia's full-scale invasion of Ukraine in February 2022 represented a watershed moment in European security. As British Prime Minister Boris Johnson put it at the time, Russian troops crossing into Ukraine unleashed 'war in our European continent', challenging the 'right of a free, sovereign independent European people to choose their own future'.<sup>1</sup> Moscow's actions substantiated British assessments about the challenge to international stability created by the return of state-on-state competition, defining Russia as 'the most acute direct threat to the UK'.<sup>2</sup> British views matched close allies' concerns. In its *Interim National Security Strategic Guidance* published in March 2021, the Biden Administration had stressed that 'the distribution of power across the world [was] changing, creating new threats' with Beijing and Moscow investing 'heavily in efforts meant to check U.S. strengths'.<sup>3</sup> In Japan, government authorities had already pointed out how China's opaque investments in a large arsenal of conventional capabilities to project power over the global commons was affecting the international power balance.<sup>4</sup> Meanwhile in Ukraine, Russia proved just how far a combination of land and artillery capabilities and missile, modern drones, and air capabilities can challenge core principles of national sovereignty.<sup>5</sup>

In such a volatile international security environment, the British government considered that military challenges in critical maritime and air domains – and in the related enablers of cyber and space – created a pressing need for a renewed focus on relevant capabilities.<sup>6</sup> As competition among states risks turning into contestation if not outright conflict, advanced conventional and nuclear capabilities, especially capabilities essential to deliver undersea and air superiority have acquired vital relevance. Three recent parliamentary reports have reinforced this point and indeed expressed some concerns at the UK's ability to generate sufficient critical mass and availability of warships and fighter combat assets.<sup>7</sup> Of no less relevance, the defence leadership in the UK has recognised that the pace of technological innovation put additional pressure on states and military institutions alike to transform force structures and introduce new capabilities to retain an advantage at sea and in the air at scale and in a timely fashion.<sup>8</sup> A key component of the British government's answer to this question, especially in the realm of air capabilities, focused on working with trusted partners to afford the costs of their development, bringing together complementary areas of expertise.<sup>9</sup>

Within this context, in December 2022, the government led by Rishi Sunak announced that it was going to develop a next generation fighter jet with Italy and Japan via the Global Combat Air Programme, or GCAP.<sup>10</sup> According to the announcement, GCAP focused on an ambitious plan to develop an aircraft that would take to the skies in 2035. The jet would combine advanced air combat features and a networking function of uncrewed aircraft, sensors and weapons through innovative data management systems.<sup>11</sup> GCAP does not constitute a military alliance – it does not formally link its members through a reciprocal defence clause. However, it entails a significant level of reciprocal access to information, doctrines, defence structures, and industry for relevant stakeholder communities in the three countries. On 14th December 2023, just a year since launching the programme, the three countries signed the international treaty to establish the headquarters for GCAP.<sup>12</sup> These will be based in the UK and have initial Japanese and Italian leadership. The new treaty represented a significant step in the need to ensure that the different industrial ecosystems in the three countries can interact more smoothly with each other to deliver on the programme's requirements.

Multinational defence cooperation on aircraft programmes is not unprecedented, with the examples of the Tornado and Eurofighter Typhoon involving both the UK and Italy. However, GCAP differs from prior experiences in two respects. First, advanced capabilities like fighter jets have grown more complex and technologically advanced. This has created a more direct link between individual projects and capabilities, enabling the effective use by the rest of the national military apparatus. Moreover, it also retains a sovereign capability for through-life technology insertion and meeting constantly evolving operational requirements. In this respect, multinational collaborations like GCAP are likely to demand levels of national investment and multinational coordination never experienced before. Second, in this trilateral programme, one partner – Japan – has very limited experience of working internationally. This is reflected in changing policy frameworks in Tokyo regarding defence industrial cooperation for defence technology transfer and exports.<sup>13</sup>

Getting a project like GCAP to deliver the required capabilities is a particularly delicate matter. This, in turn, invites specific questions about the nature of investments needed to ensure the success of this type of endeavour, especially since GCAP entails the development of capabilities that will remain in service for several decades. These capabilities amount to a multi-decade comprehensive national commitment. Some of the key questions are: How should this project evolve to remain nationally relevant and collaboratively desirable? What are the risks to such an endeavour, and how can they be mitigated? How will the three countries manage to guarantee the programme's evolution over the decades?



This research paper addresses these questions. It draws upon primary and secondary data on previous examples to argue for the need to develop a ‘GCAP generation’. GCAP requires unprecedented synergies between different institutions and communities at the national level –in strategic policy, defence, and industry– across the three partner countries. This, in turn, requires each country to invest in people from across different relevant communities to create a wider community of practice that will be essential to develop and sustain GCAP’s ability to deliver the required capabilities. For GCAP to succeed, the three countries must ensure that their respective people, institutions, and national security practices are well recognised and understood within each other’s approaches to defence posture and capabilities. Crucially, participants have to develop and sustain this cultural competency to possess the skills to overcome challenges, seize opportunities, and consolidate gains. Our argument is that this is a different investment from the current focus on talent allocation to manage the daily implementation of the programme. We regard this investment as the process to establish a ‘generation’ of individuals from different walks of life, the armed forces, civil service, industry, and third sector, who will regard GCAP as a core item in their nation’s strategic advantage ‘toolkit’ for decades to come.

The paper makes its case through five main sections. First, it examines how GCAP embodies the trend that states cooperate in a new form of multilateral framework to develop capabilities. In this type of ‘technology minilateralism’, small groups of trusted partners from within and beyond Europe choose to develop advanced capabilities together to meet the demands of an increasingly fragmented and polarised international environment. Following this theoretical framework, the paper interrogates in two sections how GCAP’s need to deliver capabilities over multiple decades requires developing a shared cultural awareness among the participating countries. It further explores why this is the case by looking at past collaborative projects. Fourth, the paper argues that this presents an opportunity for the three countries to establish initiatives to enhance cultural awareness, drawing from the International Defense Education Arrangement (IDEA) model that connected national communities of practice in a previous period of significant international defence industrial cooperation. In the fifth section, the paper articulates the case for a learning and education awareness programme (LEAP) for GCAP that could cement the long-term connections within the GCAP communities, thus enhancing the project’s resilience by means of investing in the creation of a genuine ‘GCAP generation’. Specifically, unlike with IDEA, GCAP’s character as a minilateral project suggests that such a programme should be external to the official defence institutions. The existence of robust higher education ties between the three countries offers a distinctive advantage for such an initiative to deliver the desired wider effects across the multiple communities involved in the GCAP process.

## 1. Responding to a Polarised World: Technology and Capability Minilateralism

In March 2021, the British government published the *Integrated Review of Security, Defence, Development and Foreign Policy* (IR21), which provided its broad assessment of the state of international affairs. One of the document’s main conclusions was that the polarisation of the strategic environment had accelerated at a faster-than-anticipated pace as authoritarian states, notably Russia and China, have deepened their challenges to the existing international order. As Russia’s war of aggression in Ukraine and Chinese enhanced coercive activities across the strait of Taiwan have shown, the use of high-end military power is fully back as a tool that major powers are prepared to mobilise in the conduct of international affairs. This, in turn, prompted the UK government to publish an *Integrated Review Refresh* (IRR23) in March 2023 to capture the broader implications of a sharper and more intense international security landscape.<sup>14</sup> One of these implications concerned the articulation of Britain’s growing strategic interests in working on future capabilities with one of its closest partners in NATO, Italy, and its closest security partner in the Indo-Pacific region, Japan.<sup>15</sup>

Britain’s choice of closer collaboration with Italy and Japan rested on two factors. First, as it was stressed at the signing of the international treaty for the multilateral agency to oversee the GCAP project, leaders from the three countries have expressed similar views on ‘minilateralism’ in defence cooperation.<sup>16</sup> Second, there is a clear appetite for investing in an advanced ‘technological edge’ to unlock the potential of future sovereign capabilities. The former point denotes a desired political means through which leaders in London, Rome and Tokyo want to address the return of state-centric military challenges from the perspective of major international players. The latter indicates an appealing way to accelerate the procurement of capabilities to meet those challenges successfully. When the British government announced GCAP in December 2022, then Defence Secretary, Ben Wallace, summed up these points as follows:

This international partnership with Italy and Japan to create and design the next-generation of Combat Aircraft, represents the best collaboration of cutting edge defence technology and expertise shared across our nations, providing highly skilled jobs across the sector and long-term security for Britain and our allies.<sup>17</sup>

For the three countries, therefore, these two factors reflected a desire for a form of ‘technology minilateralism’; a collaborative framework aimed at capturing a sovereign choice that allows its members to retain the initiative in ensuring strategic stability through the asymmetric advantage of a given capability.<sup>18</sup> For the UK, this should come as no surprise, given that a similar approach has informed its collaboration with Australia and the US on nuclear-powered submarines (AUKUS).<sup>19</sup>

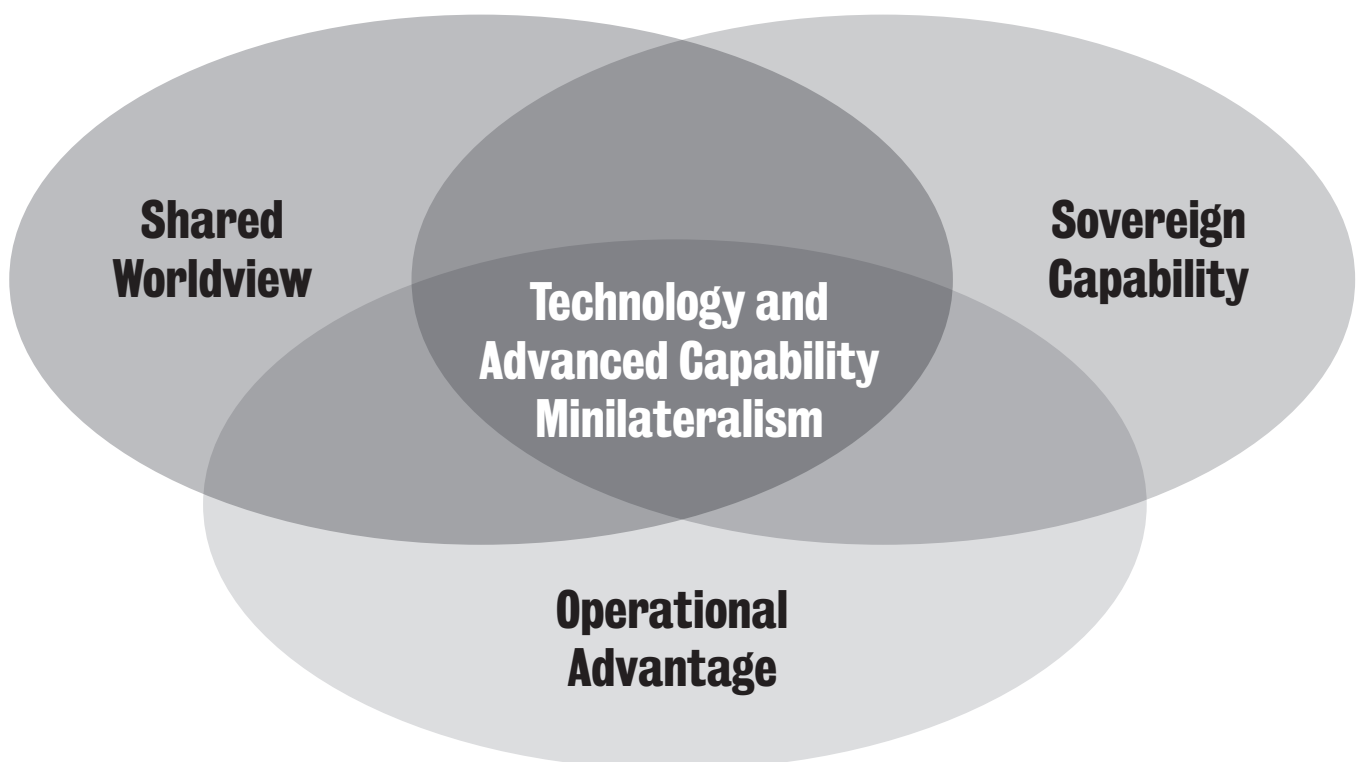
In light of the above, and assuming that details about GCAP (and AUKUS)<sup>20</sup> continue to emerge, this paper adopts the term ‘technology and advanced capability minilateralism’ since these agreements accelerate technological advancement through the joint development of advanced capabilities. Within the GCAP context, this form of minilateralism has three characteristics:

- it draws upon the political opportunity of a shared worldview about the significant military challenges to the international order;
- it is designed to empower its members with advanced sovereign capabilities that enhance their agency at the strategic level; and
- it creates an operational advantage derived from the deployability of these capabilities across different operational theatres.

As to the first point, the three countries have consistently signalled their commitment to a stable international order based on the respect of the rule of law and open societies and economies. This is not unique to these three countries, but their respective political leaderships have elected to act upon such a convergence to advance jointly on the development of complex capabilities. Notably, they restated this together in the July 2023 NATO summit in Vilnius, which Japan attended as an alliance partner.<sup>21</sup> In a recent public speech in London, Italian Premier Giorgia Meloni expressed a similar point about the fundamental values informing international stability, pointing out that, ‘today, more than ever, freedom, peace, independence and sovereignty are principles worth re-affirming and – more importantly – fighting for, literally’.<sup>22</sup> She added that these principles represent ‘the very foundations of the international law’

that countries like Italy and the UK are called upon to defend to avoid ‘a chaotic situation’.<sup>23</sup> The same sentiment is captured in the text of the Hiroshima Accord signed by the UK and Japan to raise the security relationship to the levels of a ‘global strategic partnership’.<sup>24</sup> This alignment over the principles of a stable and open international order are not meant to imply the absence of differences in priorities about their implementation, considering the Italian and British commitments to the European security architecture, and Japan’s growing defence proximity and cooperation with Australia, India and, more recently, South Korea.

This leads to the second characteristic of technology and advanced capability minilateralism. It enhances and renews resilience in the international order by providing close allies of the United States with greater sovereign agency in security matters. Indeed, elites in the three capitals feel strongly about the close ties each of their countries maintains with the United States.<sup>25</sup> All of them have, over the decades, played a major role in how Washington has exerted influence through its allies, whether in NATO, or by mobilising the US-Japan alliance.<sup>26</sup> In more recent times, this has also meant that the three capitals have become cognisant of the need to take greater leadership responsibilities in managing regional crises and global challenges to complement the wider role of the United States. That was the UK and Italy’s experience during their co-chairmanship of the 26th conference on climate change (COP 26) and their close cooperation and approach in support of Ukraine since February 2022.<sup>27</sup> Similarly, Japan’s enhanced defence cooperation with the UK and, more recently, with Italy, have all produced tangible results, from shaping actions taken within the G-7, to the UK-Japan signature of a reciprocal access agreement for military facilities.<sup>28</sup>



**Figure 1:** The Characteristics of Technology and Advanced Capability Minilaterals like GCAP

The second characteristic highlights a third feature of a technology and advanced capability minilateral like GCAP. GCAP builds upon the experience of military interoperability derived from close ties that Britain, Italy and Japan have with the United States. Such a shared operational experience will inform the development of a cutting-edge fighter jet that will empower the three member states with the military tool to act within and beyond US-led coalitions with confidence. As the war in Ukraine has consistently indicated, highly advanced fighter jets capable of delivering munitions to conduct suppression and destruction of enemy air defences (SEAD/DEAD) and of operating swarms of uncrewed capabilities will be invaluable for combat credibility in future air operations.<sup>29</sup> This empirical work is complemented by an emerging and compelling literature that highlights the limits of drone capabilities in offensive air operations, reinforcing the importance of investing in fighter jet capabilities.<sup>30</sup> Of no less significance, the importance of fighter jet capabilities in future air combat transcends the political debates presenting the pursuit of the security in the Euro-Atlantic and the Indo Pacific regions as dichotomic. As Italian Defence Minister Guido Crosetto has pointed out, technology and capability minilateralism is a choice that exemplifies security commonalities from the Atlantic to the Pacific.<sup>31</sup> Indeed, from this perspective, it represents an opportunity to bring expertise together to engage with the trans-regional character of state-on-state contestation in the air domain. While specific circumstances will inevitably affect how a state uses advanced air capabilities, their relevance and operational centrality to future conflict remains constant.

Taken together, these three characteristics help explain why technology and capability minilateralism matters to consequential powers like Japan, Italy and the UK. Maintaining an edge to shape international security in the face of mounting military challenges from authoritarian regimes is a shared objective that demands developing advanced sovereign capabilities in critical aspects of the national military architecture such as air superiority.<sup>32</sup> Within this context, it is also important to recall that the leadership in countries like China understands only too well the inherent technical and industrial challenge in developing advanced air capabilities, which in turn increases the political value of such a pursuit as a collective effort of trusted partners.<sup>33</sup> A technology and advanced capability minilateral like GCAP, therefore, enhances statecraft in London, Rome and Tokyo. It does so by playing to the strengths of its capabilities' deployability beyond specific geographical boundaries. Figure 1 captures the characteristics of technology and capability minilaterals.

## 2. GCAP: A Multi-decade Collaborative Commitment to Strategic Advantage

Against this backdrop in December 2022 British Prime Minister Rishi Sunak first announced Britain's technology and advanced capability minilateral agreement with Japan and Italy. The official statement from Downing Street described it as an 'unprecedented international aerospace coalition'.<sup>34</sup> The platform is expected to harvest the potential of emerging new technologies such as artificial intelligence (AI) and quantum computing to deliver an asset for air-to-air superiority. Similarly, this capability will seek to maximise the capacity for communication with other combat systems to deliver maximum effect from the air across the wider battle space. Crucially, this collaboration lays the foundations for a sustainable and competitive defence industry over multiple decades for the three countries.<sup>35</sup> The main ambition behind GCAP is, therefore, to underwrite national strategic advantage with the promise of future superiority created through partnerships with trusted nations. Needless to say, the project has the potential to inspire wider additional collaborations in systems across a range of diverse areas.<sup>36</sup>

Underlying the agreement is an implicit assumption that the political will and public support for the programme will last over the several decades of the programme's lifetime. This is a reasonable assumption. Given the centrality of air capabilities for military statecraft both in peace and wartime, whether for deterrence, containment, coercion, or military operations, the logic behind GCAP will likely remain relevant. China's extensive use of fighters to put material pressure on Japan and Taiwan provides a prime case in point of how advanced air combat capabilities can shape peacetime activities.<sup>37</sup> Indeed, Beijing used air deployments and operations of various scope and scale over the past three years to demonstrate its opposition to Taiwan's international support, notably from the United States. This indicates what military options the mainland might pursue against the self-governing island.<sup>38</sup> Likewise, Russia's war in Ukraine has demonstrated the significance of fighter jets (or lack thereof) in maintaining, or failing that, contesting air superiority over contemporary battlefields, with current research suggesting that the denial of air superiority will remain a significant aspect of future war.<sup>39</sup>

In March 2023, only three months after the announcement of the agreement, the Japanese, Italian and British Ministers of Defence met in Tokyo to reaffirm their understanding of the long-term commitment implied by GCAP. The meeting took place in the margins of a defence industry exhibition in Tokyo, DSEI Japan, which included the first insights into the trilateral industrial collaboration led by Mitsubishi, Leonardo and BAE Systems.<sup>40</sup> The exhibition also represented an opportunity for the collaboration to be showcased with a dedicated stand, an initiative subsequently reiterated in September 2023 at the DSEI



London defence exhibition. The phases of the project and its different components are now taking shape. The current focus is on delivering an initial air combat demonstrator by 2027, while ensuring that the necessary legal provisions for data sharing are in place to progress to critical information and communication systems.<sup>41</sup> This suggests a firm willingness to deliver on the ambition to introduce the capability by the mid-2030s. Maintaining a momentum that can offer a real capability within this timeframe will represent a significant advantage in meeting requirements for fighter jets in the three countries, as well as enhancing industrial opportunities via additional foreign sales.<sup>42</sup>

This leads to additional observations about the collaboration's ambitious nature. On the one hand, GCAP represents a practical example of an Atlantic-Pacific partnership in which US allies from the two theatres are working together on advanced military capabilities. On the other, it is the first major capability programme for many years in a defining domain involving close US allies in which Washington itself is not participating. It should, therefore, come as unsurprising that the programme's ambition has prompted some criticism. Observers have noted that GCAP has thus far been allocated – at least within the UK context – only a fraction of the funding to cover the expected costs.<sup>43</sup> This criticism is brought into further relief by the expected limited availability of additional funds as a result of the competing demands for urgently required logistical and support upgrades for NATO air forces.<sup>44</sup> In terms of delivery, the need within GCAP to ensure production, support and upgrades over several decades, as well as potential export opportunities, places a demanding requirement on the three governments to align national governance frameworks and to set up a trilateral organisation for the programme.<sup>45</sup> This point was addressed in December 2023 with the signing of a treaty to establish such an organisation, confirming political momentum behind the programme.<sup>46</sup>

Much of the criticism concerning funding draws upon comparisons with past multinational projects such as the Eurofighter Typhoon that experienced delays in timelines resulting in cost escalation.<sup>47</sup> In 1969, as the British, German and Italian governments committed to the development of the Tornado aircraft, similar observations emerged in national debates. As one British newspaper noted, it presented the British government with the hard decision as to whether it wanted to take 'Europe's £2000 million gamble'.<sup>48</sup> While complex defence projects involving an advanced capability often encounter challenges in execution – escalating development costs and delaying delivery timelines – GCAP is fundamentally different to previous multilateral air projects. The extensive use of digital twins solutions, based on existing uses of AI and quantum computing in the design and testing processes may significantly compress the initial and costly definition and development phases of past projects. In terms of project management and cost escalation, examples of current applications of digital twins by some of the leading defence companies involved in the project, notably Italy's Leonardo, set GCAP in a category that has no real comparison with past projects.

However, GCAP entails other significant risks. Indeed, current critiques of the project underestimate a far greater challenge. In its initial stages, a significant potential risk resides in aligning the three countries' governmental, business and defence cultures but without affecting the platform's ability to undertake missions in integration with the rest of the national military apparatuses of each partner. After all, GCAP is conceived to be a fighter jet that is also a lethally effective advanced control centre that can coordinate the use of other assets of the national military arsenal. As such, for GCAP to maximise a long-term strategic advantage against a compressed delivery timetable, the three countries must develop a significant level of industrial synergies, shared standardisation in doctrinal practices, and information security systems and processes. Furthermore, communities beyond defence capability procurement – notably in the realm of defence policy, strategy, and national security of the three countries must develop much stronger ties and understanding of each other. This is essential to implement effectively a key feature of this future advanced fighter jet; namely its ability to operate as a system integrator and an effect multiplier of the wider national military apparatus.

This leads to a final point for reflection. Collectively, Japan, Italy and the UK will have to develop a stable and in-depth exchange of views on how technology will alter their future military postures. This will be essential to ensure that their respective views on this subject and the requirements it creates for future capabilities evolve consistently over time and maintain some measure of continuity in the transformation of national doctrines regarding the future of air power. In this respect, they must develop a shared cultural awareness of each other's national security strategies and their assumptions and priorities. In so doing, they must develop the capacity to articulate a strategic narrative about GCAP's importance and, crucially, adapt it over time to ensure continuous political support and defence commitment to it. If successful, they may maximise their capacity to act internationally with an enhanced level of political authority and strategic agency derived by their ability to be seen as acting in a fashion complementary to, but separate from, the United States, on a major combat capability.

### 3. Back to the Future: GCAP and the 'Lessons' from Past Experience

The need to underwrite a complex collaboration with a deeper reciprocal understanding of broader national security practices and priorities should not come as an entirely new recognition. Indeed, the idea behind GCAP itself – that of pooling national resources and complementary areas of excellence to pursue an international multi-generational combat air programme – is not unprecedented. The first major example of such aspiration is the Tornado programme launched by Germany, Italy and the UK and initially known as 'Multi Role Combat Aircraft' (MRCA).<sup>49</sup> The aircraft entered operational service in the early 1980s and remains in service with Germany and Italy today, as well as with the main export customer Saudi Arabia (they were withdrawn from RAF service in 2019).<sup>50</sup>

During these five decades, the aircraft has undergone several major upgrades. Crucially, the multinational industrial consortium set up to build the aircraft, Panavia GmbH, remains in place, as does the inter-governmental programme management organisation, the NATO MRCA Management and Production Organisation (NAMMO), which has the legal status necessary to let contracts on behalf of the partner nations. This approach to programme management was also adopted for the Eurofighter Typhoon multinational aircraft programme involving Germany, Italy, Spain and the UK. Indeed, the day-to-day intergovernmental management arrangements of the two programmes eventually converged, and agreement was reached in 1995 for NAMMO's management agency to merge with its equivalent for the Typhoon programme to form the NATO Eurofighter & Tornado Management Agency (NETMA)<sup>51</sup>. Tornado jets could remain in service with Germany until 2030. The Eurofighter Typhoon programme is set to have a similar longevity. After initial feasibility studies, it was launched by the four collaborating partners in 1985.<sup>52</sup> The aircraft entered operational service in the mid-2000s. The multinational industrial consortium set up to build the aircraft, Eurofighter GmbH, continues to operate, as does the intergovernmental programme management organisation, NEFMO, and the joint programme office, NETMA. Eurofighter is expected to remain in service until the 2050s – the aircraft in Germany's recent supplementary order will enter service from the mid-2020s<sup>53</sup>.

Such longevity is underwritten by the stability of the core partner-nation consortium, but this cannot be taken for granted as many international programmes have failed, primarily in their early years. One notable example is the failed Franco-British collaboration to develop a variable geometry military aircraft, also known as a 'swing-wing' jet, in the mid-1960s.<sup>54</sup> This initiative, despite a political appetite at the time for enhanced European collaboration in this field, did not materialise in part as a result of the

difficulty to identify a suitable governance structure to ensure that different national political and economic preferences were adequately met.<sup>55</sup> In other cases, participation changed. In the air domain, for example, the initial partners for the Tornado programme included also Canada, Belgium and the Netherlands, while France was party to the initial studies into what became the Eurofighter Typhoon programme before withdrawing in July 1985.<sup>56</sup> In the 1990s, other notable examples include the UK's departure from the Franco-British-Italian Horizon frigate programme, and France leaving the – by then – tri-national Multi-Role Armoured Vehicle programme in 1997, with the Netherlands taking its place. The UK joined that programme late, left in the early 2000s and then re-joined in 2018.<sup>57</sup>

International collaborative defence capability programmes have traditionally been subject to significant external economic and political pressures, which can sometimes prove terminal. Both the Tornado and the Eurofighter programmes were no exception. Both programmes were based upon commonly agreed operational requirements. Yet, the different partner nations put varying weight on elements of those requirements – for example, while the Eurofighter Typhoon was always intended to be a multi-role aircraft, the ground-attack role was more important to the UK than the other partners. Consequently, the UK adopted an 'austere' ground-attack configuration of the fighter jet ahead of the other partners. More fundamentally, the British requirement to update the principal ground-attack variant of the Tornado in the late 1980s diverged so significantly from Germany's and Italy's requirements that the Mid-Life Update of the RAF aircraft was pursued as a largely separate project.<sup>58</sup> The resulting strains encouraged efforts within the Eurofighter consortium to maintain commonality for as long as possible.

Different legislative and budgetary cycles in the partner nations also affect key decision points – for example, the UK was able to commit to the production phase of the Eurofighter programme in mid-1996 but Germany not until late 1997. Varying institutional processes can cause considerable friction. In the UK, key decision points in major procurement programmes are not subject to formal parliamentary agreement, but in Germany they are. This led to unsettling delays in signing-off the "reorientation" of the development phase in July 1995.<sup>59</sup> Most strikingly, unpredicted geopolitical events have tended to have a significant impact. The reunification of Germany in October 1990 put unprecedented strain on Germany's federal budget and, by extension, the defence budget. This led the then German Defence Minister in 1992 to question Germany's continued participation in the programme.<sup>60</sup> German withdrawal would, almost certainly, have been fatal for the programme that other partners wished to see continue. The ensuing diplomatic row was settled in December that year by the agreement to 'reorientate' the programme and reduce its cost, at least to Germany. Germany then significantly reduced its off-take requirement leading to more wrangling over production work shares.

Tornado	1990	2000	2010	2020	2023
<b>GE</b>	170 (FGA) +18 24 (OCU) 104-Navy	189 (FGA) +2 41 Recce 35 (ECR)	156 (IDS) + 64 33 (ECR)	68 (IDS)  20 (ECR)	68 (IDS)  20 (ECR)
<b>Italy</b>	82 (FGA) +15	76 (IDS) 24 (ADV) 16 (ECR)	70 (IDS) 68 (AMX) 16 (ECR)	34 (IDS)  15 (ECR)	34 (IDS)  15 (ECR)
<b>UK</b>	156 (GR1) +76 78 (F2/3)	63 (GR4/A) 51 (GR1/A/B) 93 (F3)	113 (GR4) 24 (GR4A) 12 (F-3)	6 (GR4)*	-- --

\* 1 FGA Squadron, deployed to Cyprus until early 2019

Typhoon	2010	2020	2023
<b>Germany</b>	38	140	138
<b>Italy</b>	27	93	94
<b>Spain</b>	18	68	69
<b>UK</b>	48 +2 (T3)	138 +6 (T3)	121 +6 (T3) 10 (in store)

**Table 1 and 2:** Numbers of Tornado and Eurofighter Typhoon Aircraft in Service

Source: International Institute for Strategic Studies, *The Military Balance* (London: Routledge, 1990-2023).

Past experience suggests, therefore, that one should expect a variety of domestic and international challenges – not least unforeseen ones – to complicate the keeping on track of a complex project delivering advanced defence capabilities, related systems, and their support, over multiple decades. Past experience further indicates that the ability to adapt and adjust to such circumstances will be essential to the longevity of such programmes. This, in turn, presents a central dilemma about how best to shield collaborative projects from disruptive events and, failing that, how to best mitigate against the potentially fatal effects of such events. In the case of the Tornado programme, the broader strategic context of the Cold War ensured a degree of continuity in terms of the demands of national security and capabilities procurement, which in turn informed the initial stages of collaboration over the Eurofighter Typhoon. By the time that the strategic circumstances started to change at the end of the Cold War, the desirability of multilateral cooperation was politically accepted and institutionally integrated within and across national defence communities.

## 4. Ensuring Success: Risk Mitigation as an Opportunity for a Resilient Relationship

Collaborations like GCAP demand more than a complex set of agreements and legal mechanisms to produce the most desirable and lasting results. Indeed, to some degree, major multinational programmes – and certainly Tornado and Eurofighter Typhoon – were designed from the outset to contain and mitigate centrifugal pressures. A *sine qua non* underwriting both programmes was the agreement of a common operational requirement embodying several compromises and trade-offs between the partner Air Forces and signed-off at very senior level. The programmes were based upon international agreements, Memoranda of Understanding (MoUs), which set out the number of aircraft to be bought by each partner nation, the cost-shares, the industrial workshares, and so on. These also included inserting significant penalty clauses for any partner resiling from its commitments as a strong disincentive to do so. In addition, the programmes included elaborate governance arrangements to closely monitor the implementation of these MOU, and to provide a relatively safe and discreet forum for the ventilation of disagreements and for their escalation, and hopefully resolution. The need for mitigation was, among the partner governments, a well-understood priority with a variety of mechanisms pursued to ensure the desired results.<sup>61</sup>

This did not obviate the need for higher-level intervention at times. With some frequency, disagreements over major issues – for example, the selection of the Eurofighter radar in the late 1980s – were elevated outside the formal programme structures to the Ministerial/political level. The partner governments did not therefore rely solely on their respective project offices for information about the programmes and the intentions of the other governments. Both Germany and the UK, for example, placed relatively senior MOD officials in their respective Embassies to build and maintain load-bearing communication channels between their Ministries to help resolve such issues. Indeed, taken altogether, one key feature of these programmes was the multiple channels of communication and personal connections that developed to ensure that national positions were clearly articulated, and collective intent was maintained – and that, when major problems emerged, mutually acceptable solutions were found.<sup>62</sup>

There was recognition, however, that such measures were not enough in themselves and that officials needed to be educated more systematically about the procurement structures and processes, and the political and strategic perspectives and policies of partner countries. An important initiative in this respect was the establishment in 1988 of the IDEA programme by the US, UK, France and Germany. The initiative was conceived, “[o]ut of the need to educate program managers working in an international environment.”<sup>63</sup> It involved the defence colleges or

centres responsible for professional education on defence acquisition of the partner countries – the Defense Systems Management College (DSMC), the Royal Military College of Science (RMCS), the Centre des Hautes Etudes de l’Armement (CHEAr) and the Federal Academy of Defence Administration & Technology (BAKWVT) – working together to deliver IDEA “to provide a forum for international cooperative education.”<sup>64</sup>

IDEA’s main deliverable was to convene an annual conference “to provide a better understanding of other nations’ acquisition environment, structure and processes and to share lessons from those involved with international defense cooperation programs”<sup>65</sup> In 1998, the IDEA Board of Directors further expanded the scope of the initiative and approved the development of a textbook to compare the Defense Acquisition Systems of the four nations. This was published as *A Comparison of the Defense Acquisition Systems of France, Great Britain, Germany and the United States* in September 1999.<sup>66</sup>

Crucially, IDEA addressed general issues associated with defence equipment cooperation and was not attuned to specific programmes. In their “Endorsement” to the textbook, the senior leadership of the four founding organisations noted, “People working on international cooperative programs quickly discover that different budget cycles, political issues, and cultural perspectives can exacerbate small problems and, in some cases, create larger ones”. They added, “The history and culture of each nation is reflected in its approach to armaments development.”<sup>67</sup> This broad understanding of the education imperative was applied in the textbook. The coverage of each country began with “History and Traditions” and then covered broader governmental structures, the organisation of the Ministry of Defence and the procurement/acquisition entities, the acquisition process, and the defence industrial base. Yet, IDEA has not survived the passing of time. There appear to be several reasons for this. Two of the four founding colleges/centres (CHEAr and RMCS) have been absorbed into other entities, while a third, the DSMC, is now part of the Defense Acquisition University (DAU). Of no less relevance, financial and staff resources were not made available to update the textbook, which steadily lost its relevance as national acquisition systems and processes evolved during the 2000s. More broadly, the political focus on multinational cooperation in the development of major new weapons systems which continued through the 1990s – as governments grappled with declining defence budgets and looked for ways to rationalise their defence industries – weakened after 2000. In the first two decades of the post-Cold War era, and more so after 9/11, governments focused more on peacekeeping, counterterrorism and stabilisation campaigns in Iraq, Afghanistan, the Sahel and elsewhere. The period between 2000 and 2015 saw a relative paucity of new multinational programmes being launched. The return of state-on-state competition has, on the other hand, seen a renewed emphasis on cooperation between NATO and EU member states and their close partners in the Indo-Pacific.



The IDEA experience raises an important question of relevance to a multinational project such as GCAP. Institutionally, London, Rome and Tokyo are developing the layers of connectivity – establishing links among armed forces, ministries, industry, and embassies – that are consistent with an understanding of the need to ensure that the issues emerging from the implementation of the programme have fora for finding solutions. Yet, this is an asymmetric process, one in which broader defence ties between Italy and Japan, for example, are not as developed as those linking Tokyo to London. Further, in a collaboration that brings together countries with different institutional and defence cultures, there is a fundamental need to address the development of a shared cultural awareness among current and future participants and stakeholders. Like the IDEA initiative, therefore, GCAP needs a wider dedicated effort to align a broader set of communities within the three countries.

Owing to the nature of the capability as explored in the previous section, and in the light of the IDEA experience, we believe that the awareness process will have to reach beyond the realm of the specific defence communities. As such, like its predecessor programmes, GCAP needs its own ‘generation’ of officials and practitioners from the civilian and military communities, public and private sectors, who can work and interact closely with each other based on mutual cultural competence. Unlike its predecessors though, GCAP needs its own ‘idea’ of what it means to have a ‘GCAP generation’ to be pursued and nurtured in a context that can facilitate the alignment of a wider set of participants from defence, as well as other communities of practice, notably policymaking, industry and indeed third sector.

## 5. A Time to ‘LEAP’ Forward: An Initiative to Build the GCAP Generation

How can building a GCAP generation best be approached? The answer to this question demands a preliminary recognition of the programme’s most particular – and specific – challenge. The three parties have robust longstanding sets of bilateral diplomatic and economic ties with each other. Yet, two participating countries -- Italy and the UK-- have a long experience of defence equipment cooperation between themselves and others, with well-developed defence industrial sectors and trade associations reflecting considerable domestic impact and foreign sales experience. Neither has a similar industrial experience with Japan; equally significant, Japan has only in recent times started to take important steps to develop its defence industrial sector with an eye to deriving broader strategic advantages from its capacity. Tokyo has, in fact,

very limited experience of equipment cooperation with other countries and virtually none with Italy. Relatedly, Italy and the UK are operationally very close, as they have regularly participated in US-led and NATO-led military operations alongside each other. Conversely, while Japan and the UK have significantly developed their defence cooperation over the last decade -- for example, through an increasing number of joint exercises -- Japan has only recently started to explore more significant ways to enhance such cooperation with Italy.

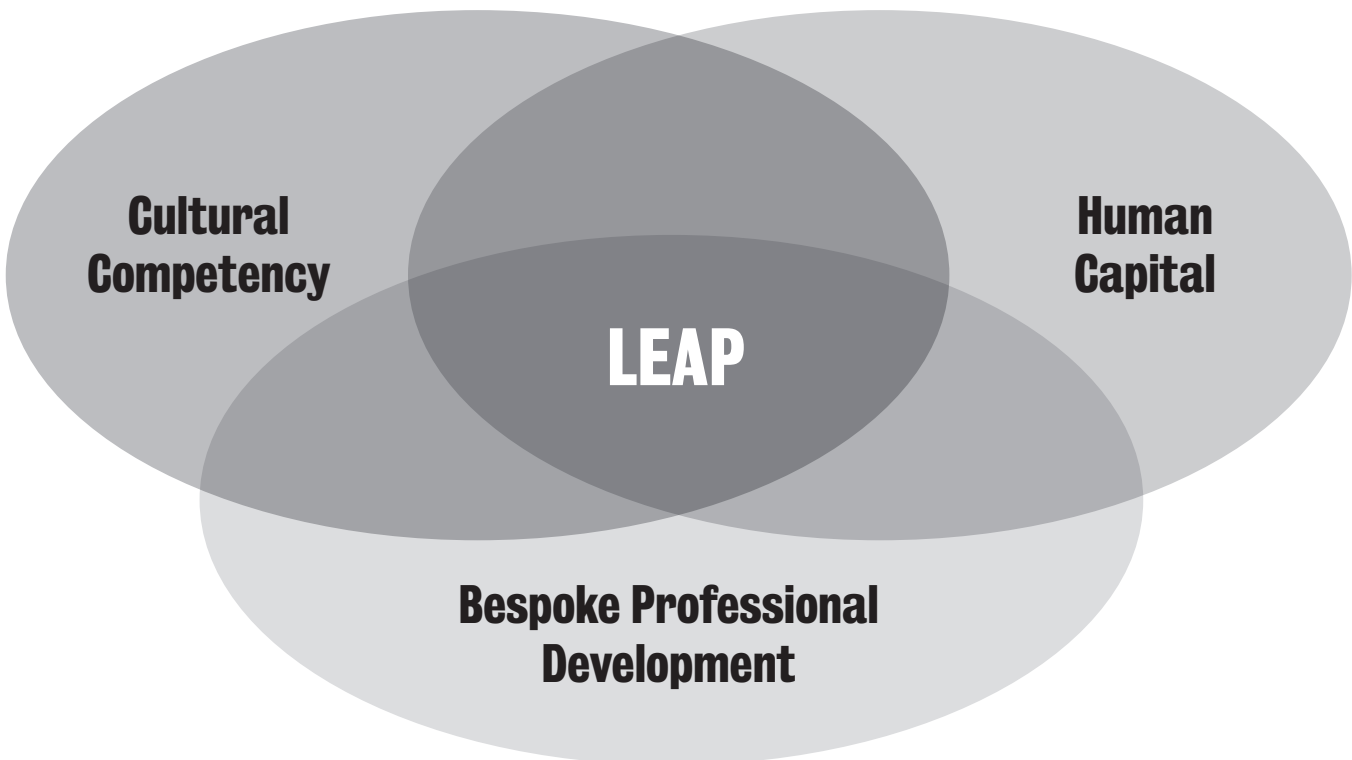
We believe that this challenge presents an opportunity to plant the seeds to invest in a dedicated GCAP ‘generation’. We think that to underwrite the delivery and sustainment of the programme over several decades, it is essential to start nurturing today the cadres of officials, policymakers, academic experts, and business specialists who will continue to consolidate, deliver and transform GCAP over time. In this respect, GCAP’s challenge can be used as a starting point to devise bespoke learning programmes aimed at closing the existing gaps in shared experience and understanding. Such programmes would also represent a pathway for younger generations of officials, military officers, and wider specialist communities to develop an initial expertise on this trilateral collaboration. We believe that incentivising participants and stakeholders from the three countries to develop the cultural competency and awareness about each other’s national security constructs, and systems, is a critical and integral step towards the creation of such a generation. From our perspective, GCAP needs to make a leap forward in creating the opportunities for, and in devising the incentives to, develop today the cultural competency of those who will ensure success in decades to come. Stakeholders today need to develop the understanding for, and the desire to contribute to, ensuring GCAP can set the standards for future cooperation in advanced capabilities.

This is why we propose that the three countries establish a GCAP Learning and Education Awareness Programme (LEAP). We envisage that LEAP would be a trilateral professional development initiative running in parallel to GCAP, with two primary aims. First, it would help develop a sense of belonging and institutional identity through joint activities among early and mid-career officials, from the military, civil service, academia and broader policy expertise, and industry of the three countries. Second, LEAP would offer a portfolio of activities available to those officials currently involved, or designated to be so soon, with the management of GCAP, as a way to complement and enhance their own understanding of the three countries. This would make a substantial contribution to realising the wider objective of creating a GCAP generation, while actively mitigating risks unfolding from misunderstandings. By developing activities designed to build and enhance understanding of the strategic challenges faced by the three member countries, their respective political cultures, institutional processes, and industrial ecosystems, LEAP would equip participants and stakeholders with the intellectual tools and transferrable skills not merely to address problems but also to identify new opportunities.



One of the key advantages underwriting this vision for the LEAP initiative is that, unlike in the case of IDEA, it would draw upon existing synergies within the three countries' civilian higher education systems. Higher education has undergone significant changes throughout the last two decades with the UK taking a firm lead in Europe in exploring in a systematic fashion how universities can support the professional development needs of personnel in the armed forces, civil service, and private sector. Universities in the three countries have redefined the advantages of using civilian institutions to keep learning and development activities in defence and security at the cutting edge of professional education. Indeed, universities in the three countries have promoted internationalisation strategies in terms of partnerships and curricula, which would enable them to support conceptually innovative and structurally modular ways to deliver education. Today, these offerings allow students to pursue advanced degrees that, either as stand-alone, or as credit-bearing initiatives, enrich their experiences with a unique degree of cultural competency.

We believe that this combination of experience in understanding the specific demands of professional learning and development in the realm of defence affairs and the capacity to work with universities in all participating countries sets an initiative like LEAP in a unique position to succeed. Of no less relevance, the direct involvement of universities would position the initiative outwith the boundaries of defence institutions, facilitating wider outreach across different communities relevant to the success of the programme (such as the political and industrial). The decision by the three governments to establish a multilateral organisation to oversee the delivery of the programme with its headquarters in the UK further creates a timely opportunity to explore how to engage in this crucial component of the wider process with the agency tasked to ensure its success. Going back to the theoretical framework introduced in this paper, we conceive LEAP as supporting the spirit of this technology and capability multilateral in the following way. It enhances the prospect of a shared worldview over a longer timeframe by promoting cultural competency across the participants. It supports the creation of a 'sovereign capability' through the development of an expert community of practice. It advances the pursuit of strategic advantage by empowering such an expert community with cutting edge knowledge analytical skills to interrogate how war will evolve in the future. Figure 2 illustrates this idea.



**Figure 2:** LEAP's Contribution to GCAP

The higher education systems in the three countries offer three specific reasons for such a belief. First, the academic country-expertise provided by networking leading institutions in the three countries would reside within wider disciplinary contexts pertaining to international and strategic studies. This would ensure that LEAP's content would enable participants to understand each national context within wider geopolitical and security debates. Second, existing experience in professional military education within higher education in the three countries would ensure that initiatives within LEAP have a maximum degree of modularity in content (with levels encompassing basic awareness to advanced expertise-building), method of delivery (in person, remote, or hybrid) and tailoring in defining the typology of activities (from masterclass lectures to short in-country immersive experience, to table-top exercises). Third, the current experience in identifying clear ways for academic accreditation through different university systems would enable LEAP to become an appealing career-development opportunity for participants who could subsequently go on and complement their LEAP experience with further education, from masters to doctoral programmes.

What would the next step consist of? No programme of this kind can succeed without a firm buy-in from the key stakeholders in each country. On this matter, military staffs (including Air Forces), procurement officials (DE&S, SEGREDIFESA, ATLA), and key members from industry should be involved in an initial listening exercise to coalesce support to, and clarify the requirements for, a LEAP initiative. An initial trilateral workshop, conducted virtually and hosted by the universities, to map the potential for LEAP would facilitate such a task and initiate scoping (and planning) of a potential pilot programme of activities. These, in turn, could be used to 'test' the concept and 'refine' its initial offering. The main prerequisites to implement an initial pilot for a LEAP initiative would include the three governments committing to releasing staff for participating in its activities (and meeting any associated costs for their delivery and travel). In this regard, the output from the webinar could include the constituent elements of a framework document for an agreement in principle to activate LEAP, and for developing the MoU under which the universities would implement it. As a principle, the funding model would be kept as simple as possible to reduce unproductive transactional costs. As mentioned above, the new GCAP International Government Organisation (GIGO) to be headquartered in the UK could take the lead from a GCAP perspective in ensuring the implementation of the different initiatives included in the LEAP programme, with the aim to establish a GCAP alumni network to enable those participating in the different initiatives to remain anchored to this initiative.

## Conclusions: Transforming Today's Challenge into Tomorrow's Opportunity

In three crucial ways, GCAP reflects a need to respond to the demands of contemporary geopolitics. The first unfolds from the political desire to act upon a shared worldview. Such a worldview considers as particularly concerning the rise of states willing to use military power to advance their agendas and able to deploy advanced capabilities to challenge core principles of the international order. The second demand pertains to the question of the costs of developing advanced capabilities. GCAP embodies, in this respect, the desire of three close partners to make the sovereign choice to develop relevant capabilities collectively to coordinate actions, signal their resolve, and contain costs. The third demand unfolds from the second and relates to the need to develop links and forms of interactions for such partnerships to endure. The combined challenge of managing multinational defence programmes in the context of today's complex capabilities sets a specific question around their long-term sustainability.

These demands, we believe, offer a unique opportunity to rethink our approach to the resilience and longevity of defence collaborations. In this paper, we drew upon past experience related to the Eurofighter Typhoon project to argue the case for a dedicated educational and awareness programme aimed at creating and, over time, nurturing a genuine GCAP generation. We believe that, for GCAP to develop a lasting and diverse community of practice within Japan, Italy, and the UK, it is essential to invest in developing a shared deep-seated understanding of why GCAP matters to the three countries. An awareness programme, inspired by the historical IDEA model, that is anchored within the three countries' university environment would offer such an opportunity. We have called such an initiative "LEAP" to indicate its ambition to help GCAP with leaping forward through future generations of participants who will possess the strategic fluency and reciprocal bureaucratic understanding to ensure the programme's adaptability and success. We also believe that such an initiative should draw upon existing and growing synergies among higher education institutions to ensure a wider reach for the programme. This will reflect the more complex and multi-layered communities of practice who will be involved in GCAP and will help in transforming the capability demands of today into the strategic advantage of tomorrow.

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