



HM Government

Eurofighter Typhoon for Belgium Air Combat Capability Program

Request for Government Proposal Response - BAFO
14 February 2018





On behalf of the Eurofighter Typhoon partner nations, the UK is delighted to propose to Belgium an enhanced defence and security partnership enabled by Eurofighter Typhoon

An enduring partnership for Eurofighter Typhoon equipment, availability, operations and industrial growth.

Our proposal meets all of the operational requirements set out in the Air Combat Capability Program (ACCaP), and is backed by our partner governments in Germany, Italy and Spain. It will develop and sustain key technologies, skills and knowledge in Europe, and has the full industrial support of the Eurofighter partner companies - BAE Systems, Airbus and Leonardo. We invite Belgium to become part of Europe's largest international defence collaboration programme.

Our proposal is the most comprehensive equipment partnership ever offered by a Eurofighter Typhoon partner nation, with a Government to Government Memorandum of Understanding (MoU) between Belgium and the UK underpinning a deep and enduring strategic partnership.

By selecting Eurofighter Typhoon, Belgium will become a partner in an international programme that delivers the backbone of European air power. With nearly 500 aircraft in service with Belgium's near neighbours, the continuing growth of the UK Eurofighter Typhoon force and further production orders being considered by other Eurofighter Typhoon partner nations, it will remain the largest combat aircraft fleet in Europe for decades to come.



A strategic defence, security and industrial partnership

Our Eurofighter Typhoon proposal offers Belgium:

A strategic defence, security and industrial partnership with the UK and Eurofighter Typhoon partner nations for decades to come.

A unique partnership between the Belgian Air Component (BAC) and the Royal Air Force (RAF), building on over 70 years of flying and working together.

Proven mission effectiveness, reliability and interoperability with US and NATO coalition partners.

Low capital expenditure and proven most cost-effective availability through-life.

A low-risk programme solution.

A strong voice and industrial participation for Belgium in Eurofighter Typhoon's future capability evolution.

A route to sovereign capability and protection of Essential Security Interests (ESI).

Joint investment in collaborative Research & Development delivering world leading technologies that will enable Belgium to play a part in the next generation European combat aircraft programme.

Estimated Belgian GDP growth of €19 Billion by 2043.

A national Cyber Defence Network capability protecting vital sectors of the Belgian economy.



The European solution for Belgium



Up to 500 aircraft in service with Belgium's near neighbours – the largest combat aircraft fleet in Europe today and for decades to come.

11 operating bases and 2 forward deployment bases across Europe.

A unique partnership with the Royal Air Force

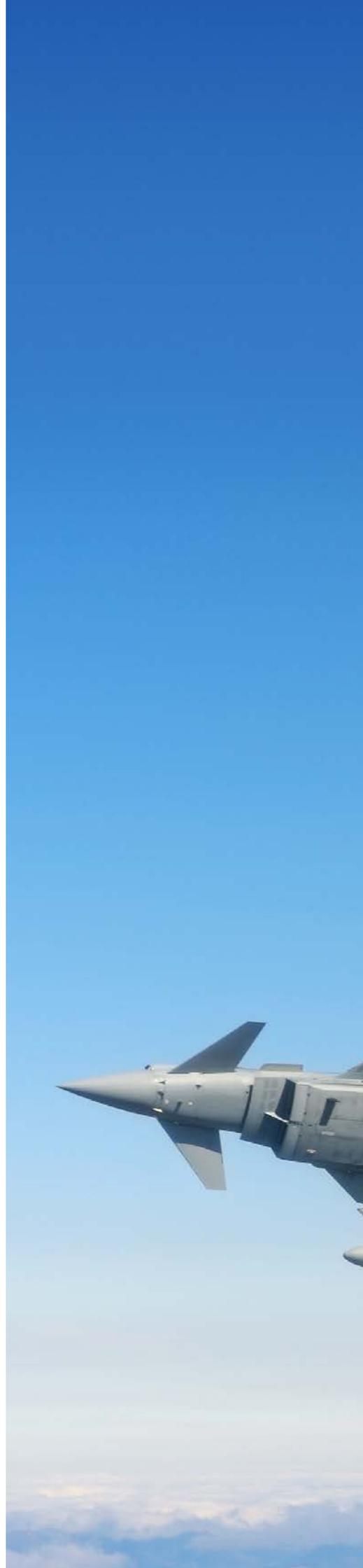
Low risk Eurofighter Typhoon capability and services alignment, offering the BAC the same benefits enjoyed by the RAF.

Our proposal offers a proven next generation combat aircraft with a low risk, cost effective training and support solution to meet capability transition and integration requirements.

- Belgium will be able to leverage the RAF's experience from over 10 years of Eurofighter Typhoon operations.
- The BAC will fly the same aircraft standard as the RAF throughout the Capability Transition Period. Thereafter, the BAC would work in partnership with the RAF to deliver further enhancements and will be guaranteed a strong voice and influence over the aircraft's capability evolution.
- Integration with the RAF's independently proven, most cost-effective, next generation combat aircraft support solution offering what we know to be the lowest total cost of ownership for a next generation fighter.
- Support to Eurofighter Typhoon operational deployments, including deployed logistics, Combined Air Operations Centre (CAOC) staffing, and air mobility co-operation.
- Joint training of aircrew, groundcrew, weapons instructors and operations support personnel, both in the UK and in Belgium.
- Access to UK airspace, Electronic Warfare (EW) and weapon ranges, low-flying areas and linked synthetic mission training systems.
- Full co-operation on EW and Mission Data generation and validation with transfer of knowledge to Belgium; guaranteed provision of mission data sets.
- Exchange Officers.
- Squadron twinning.
- Three places on the UK's Empire Test Pilots School course enabling the BAC to fully participate in future test and evaluation.
- Deeper integration in UK-based major joint exercises as well as UK sponsorship of Belgian participation in large-scale exercises hosted by allied partners such as the United States.
- Opportunities for wider co-operation in areas of mutual interest such as A400M, Protector High Altitude Long Endurance UAS, and Pilot Training.



 **ROYAL
AIR FORCE**



An enduring relationship



A low-risk, proven, next generation fighter for Belgian Defence needs

Eurofighter Typhoon: proven mission effectiveness, reliability and interoperability.

Eurofighter Typhoon is a full multi/swing-role aircraft whose strengths include:

- Assured provision of 24/7 Quick Reaction Alert (QRA) to sovereign and NATO airspace, including deployed commitments such as Baltic Air Policing and Southern Air Policing from Romania and Estonia.
 - Combat-proven performance, with inherent and proven interoperability with US and NATO coalition partners in deployed multi-role operations in Libya, Syria and Iraq.
 - Outstanding reliability during RAF operations, as of January 2018, RAF Eurofighter Typhoons had flown over 14,000 hours in the international coalition campaign against Daesh, with a 100% mission achievement rate and delivery of more than 1200 Paveway IV Precision Guided Munitions.
 - Autonomous deployment capability, without the need to link into the Engineering Support System (ESS) if required.
 - A large swing-role payload (>9000Kg) with an optimised UK weapons set.
 - Future Dual Capable Aircraft potential, in line with European partners.
 - Network enabled weapon system architecture with sensor data fusion for full US and NATO interoperability and real-time battle-space awareness and picture-sharing.
 - Core essential enabling component within any indigenous or coalition force mix, to bridge niche capabilities of other weapons systems.
- Fully integrated, intelligent, Defensive Aids Sub-System delivering high survivability in the most complex scenarios.
 - Exploitation and sovereign autonomy of Mission Data expertise to provide combat advantage:
 - We will assist to jointly develop and deliver RAF Air Warfare Centre endorsed Mission Data products to support BAC Eurofighter Typhoon aircraft.
 - Full involvement of BAC personnel in the validation of Mission Data using hardware in the loop, or increasingly, emulation, providing visibility, confidence and assurance in the Mission Data that pilots rely on in operations.
 - Transfer of knowledge and expertise to establish a route map to a Belgian national capability.
 - Taken together, all these measures ensure Belgian Defence confidence, sovereign autonomy and future security of Mission Data supply and expertise.



*The backbone of NATO
European air power*



Training: A low-risk transition in partnership with the Royal Air Force

Joint training of aircrew, groundcrew, weapons instructors and operations support personnel, both in the UK and in Belgium.



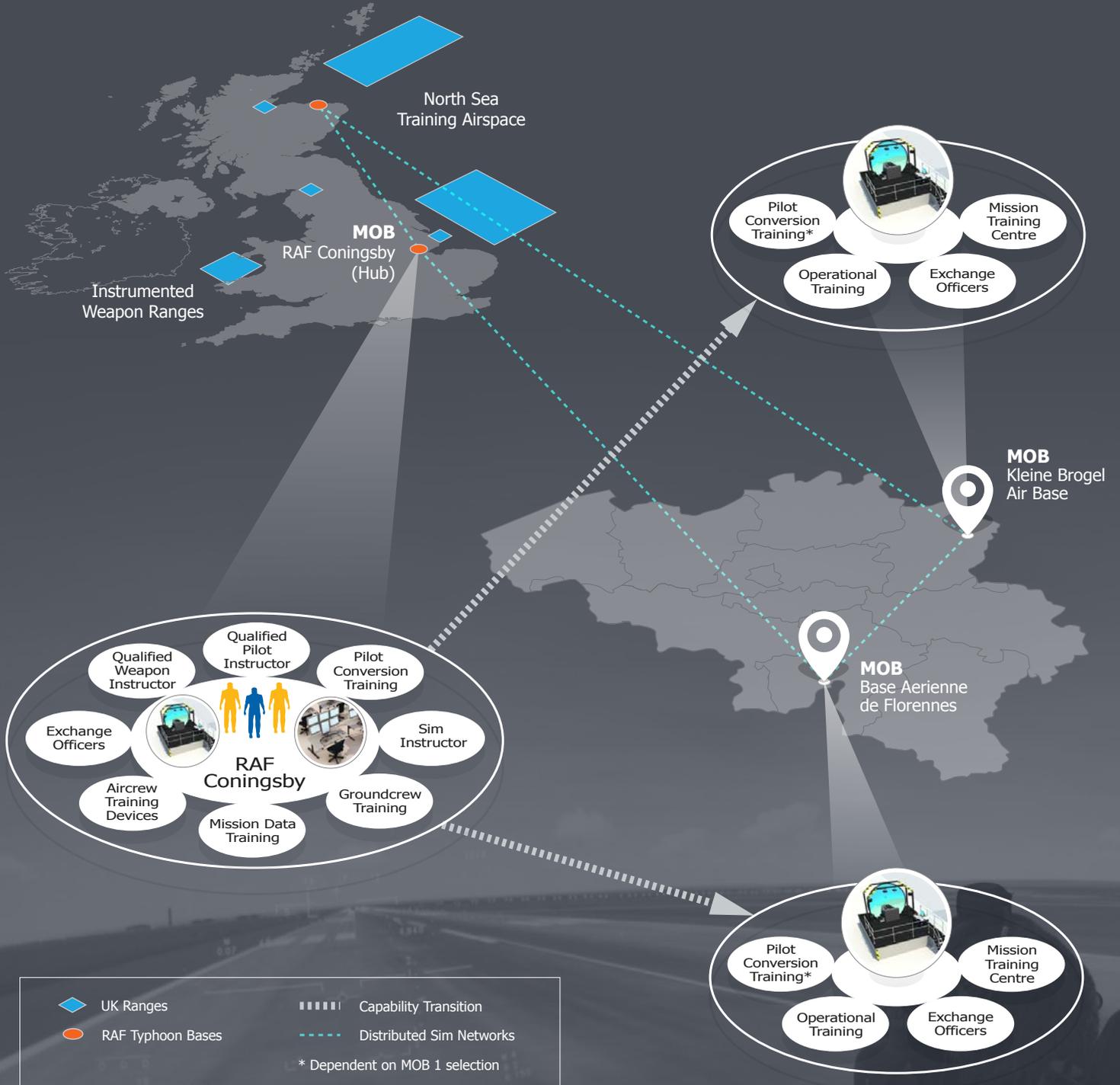
During the Capability Transition Period, pilot training will be delivered in full partnership with the RAF. This will include conversion to type of 67 BAC F-16 pilots, provision of Qualified Pilot Instructor courses and Qualified Weapon Instructor courses, supplemented by Exchange Officer positions. Pilot training will be delivered from RAF Coningsby in the UK and from a Belgian Main Operating Base (MOB) Training Flight at the start of the Capability Transition Period.

In parallel to this, infrastructure for a 4-ship linked synthetic mission training and pilot conversion to type training facility will be established at both of Belgium's Eurofighter Typhoon MOB's to deliver a comprehensive and independently sustainable national training capability for the follow-on period.

Benefits from training in partnership with the RAF include:

- The harnessing of training and economic benefits offered by the evolution of the RAF's synthetic training approach. Currently 75% of Eurofighter Typhoon pilot conversion training is conducted in the simulator. There is also an intent to increase the synthetic element of operational training from 25% to 50%.
- Access to a network of synthetic devices enabling multi-entry / multi-location training exercises.
- Tactical interoperability resulting from the exchange programmes and integrated training proposal, which the RAF would be keen to extend beyond the Capability Transition Period.
- The integration of aspects of Eurofighter Typhoon and F-35 training within the RAF which has potential benefit to Belgian Defence in satisfying its commitments to operate with other current and future US and NATO combat aircraft types.
- Access to advanced specialised training facilities such as the EW range at RAF Spadeadam, fully instrumented weapon ranges and North Sea training airspace.
- The ability to draw on over 40 years of UK experience in tailoring training solutions to meet the needs of partner governments and air forces.
- The leveraging of savings against the current training programme through training with the RAF in the UK with its comparable European weather conditions and airspace environment.
- Opportunities for jointly deploying alongside the RAF in global training exercises and UK sponsorship of Belgian participation in large-scale exercises hosted by allied partners.
- Aspiration to explore a wider scope of training opportunities within a UK partnership on programmes such as A400M, Protector UAS and Pilot Training.
- Opportunities to share training systems enhancements through the UK future Live Virtual Constructive Training Strategy.

Leveraging mutual training benefit with the RAF



Partnering for guaranteed fleet availability: The Typhoon Total Availability eNterprise (TyTAN)

The lowest through life cost solution, with lowest cost per flying hour for a next generation combat aircraft.



Belgium's Eurofighter Typhoon aircraft will become part of the RAF support arrangements centred at RAF Coningsby known as TyTAN. Together with an engine availability support contract, these services deliver mission-capable pilots, aircraft and support to operations.

TyTAN is a 10-year UK Ministry of Defence (UK MOD) partnership with industry, primarily BAE Systems. It is the result of more than 20 years of evolution of availability based support arrangements in the UK and is recognised internationally as best practice enterprise-level support service delivery for complex air systems. TyTAN has been independently proven as the most cost-effective next generation combat aircraft support service and offers Belgium the lowest total cost of ownership.

Integrating Belgium's Eurofighter Typhoon within TyTAN provides Belgian Defence with the most cost effective guaranteed flying hour output service. The guaranteed delivery of the BAC and RAF flying task will be managed through equal participation in the Joint Force Management construct. Provisioning of spares specifically for the Belgian fleet will also ensure freedom of autonomous operation for Belgium as required.

Belgium will be able to enjoy the benefits of continuing improvements in Eurofighter Typhoon support arrangements as they evolve beyond 2026 in partnership with the RAF.

Additional benefits to Belgium include:

- Low capital expenditure by making use of existing depth repair and overhaul facilities (on and off aircraft), engineering support services and common spares pool for low-volume items.
- Flexibility to overfly the declared flying plan in times of surge.
- Engine availability support with the RAF delivered by Rolls-Royce.
- Assured safe operation of the Eurofighter Typhoon through a certification and airworthiness support service that benefits from the UK MOD's experience and is European Military Airworthiness Regulations (EMAR) compliant. This includes resolution throughout the Entry Into Service period of all minor modifications, obsolescence and safety issues through a comprehensive update service.
- Autonomous deployment capability, without the need to link into the Engineering Support System (ESS).
- Alignment of Eurofighter Typhoon support arrangements as they evolve beyond 2026 to the next phase of TyTAN, in partnership with the RAF.

*Affordable, guaranteed
combat availability*

TyTAN - Operating as one enterprise to ensure mission success



Increasing Capability



Belgian
Industry

UK
Government

UK
Industry



Transforming the Enterprise

Extending
Data
Integrity

Smarter
Engineering

Optimum
Fleet
Availability

Supply
Solution

Efficiency
of operating
costs

Reduced cost
per Flying Hour

Fulfilment of Belgium's Essential Security Interests

Eurofighter Typhoon will generate long term Economic Growth in Belgium by addressing the protection of all Essential Security Interests, and position Belgium for a future European combat aircraft programme.

Building on the already well established Eurofighter consortium footprint in Belgium, our ESI proposals will generate an estimated €19 Billion of additional economic value by 2043, with wider multiplier effects creating a further €6.2 Billion. With significant investment in research and development of world leading manufacturing and material technologies, and knowledge

transfer, selection of Eurofighter Typhoon will position Belgium for partnership in a next generation European combat aircraft programme. In addition, the establishment of a National Network Cyber Centre in co-operation with the UK will protect vital sectors of the Belgian economy and create highly skilled cyber specialists.

Over 25 years the Eurofighter ESI Proposals could deliver €19 billion into the Belgian economy, with an additional €6.2 billion from wider economic multipliers



Current Eurofighter Programme Footprint in Belgium > €600 million investment annually

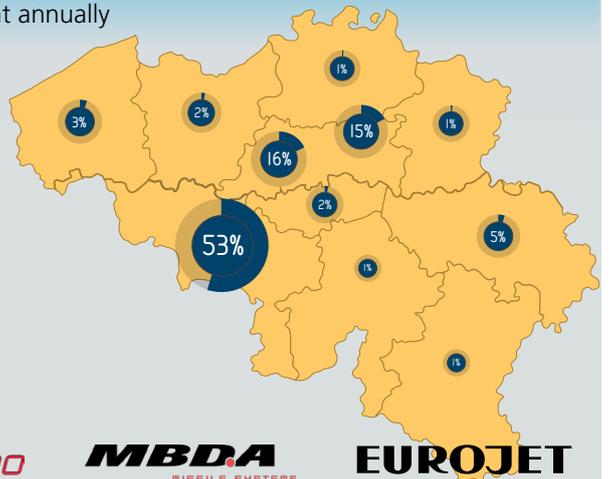
Eurofighter and Eurojet consortium companies spend over €600m annually in Belgium, working with some 200 companies spread across the regions.

€ 378m+ Estimated annual spend in the Wallonia region by Eurofighter consortium companies

€ 132m+ Estimated annual spend in the Flanders region by Eurofighter consortium companies

€ 90m+ Estimated annual spend in the Brussels region by Eurofighter consortium companies

This equates to a further €7.2B of sales between now and 2030.



Our proposed measures, in response to Belgium's ESI, build on extensive relationships with the Belgian aerospace and defence sector. Investments in Research and Development, production technology and skills will be targeted to ensure Belgium can be part of a balanced partnership in the joint development and commissioning of new capabilities in the context of our collective defence.

Our proposal addresses each of Belgium's ESIs by investing with Belgian industry in long-term sustainable measures, and protecting vital sectors of the Belgian Economy.



Two regional National Development Centres, in Flanders and Wallonia, for advanced materials and manufacturing, that could position Belgium for a substantive role within the Eurofighter Typhoon programme for future European combat aircraft programmes.



The transfer of multiple C4I technologies inherent on the Eurofighter Typhoon platform into Belgium for wider exploitation.



Opportunity to transfer Eurofighter Typhoon production capabilities, including fin, rudder, engine bay doors and carbon parts.



During the Capability Transition Period Belgian Defence jointly with Belgian industry can undertake a strategic long term review of Eurofighter Typhoon support and adopt national capabilities based experience, thus expanding the ESI for support.



Working together in influencing Eurofighter Typhoon's future development and providing significant industrial opportunities, for example in cockpit displays and radar enhancements. Proposed work package transfer and future development integration into Belgian industrial base will ideally position Belgium for involvement in any future UK/European aircraft programmes.



Belgian industry involvement in production and verification of Mission Data and Operational Analysis, developing a route map that will ensure sovereign control of EW data and mission planning.



Partnership with Belgium-based companies to address the Mission Training Centre requirements, providing this service to the BAC. This measure will position Belgium at the leading-edge of Research and Development, integration, production, support and management of synthetic training, and provide a hub for next generation pilot conversion training.



Protection of vital sectors of the Belgian economy through development of a Belgian National Network Cyber Centre, a Cyber Innovation Centre and a Cyber Research Partnership with BAE Systems Applied Intelligence Nv, all underpinned by the partnership between the UK and Belgian Governments.

Enabling achievement of Belgium's Defence and Security objectives to be an active contributor to European security through NATO and the European Union.

The low-risk solution for the Belgian Defence ACCaP Requirement

Programme delivered and assured by the UK Ministry of Defence on behalf of Belgian Defence.



- The UK MOD will manage all aspects of the procurement and support programme for Belgium alongside our own Eurofighter Typhoon programme.
- Acquisition and support will be undertaken using best practice from within the UK MOD's national procurement processes, offering Belgian Defence the same benefits enjoyed by the RAF. This ensures Belgium benefits from an affordable, low-risk service that is managed and assured by the UK MOD.
- The MoU outlines the joint governance structures to enable this including enduring joint oversight of the programme by UK MOD and Belgian Defence out to 2058.

An affordable, cost-effective solution.

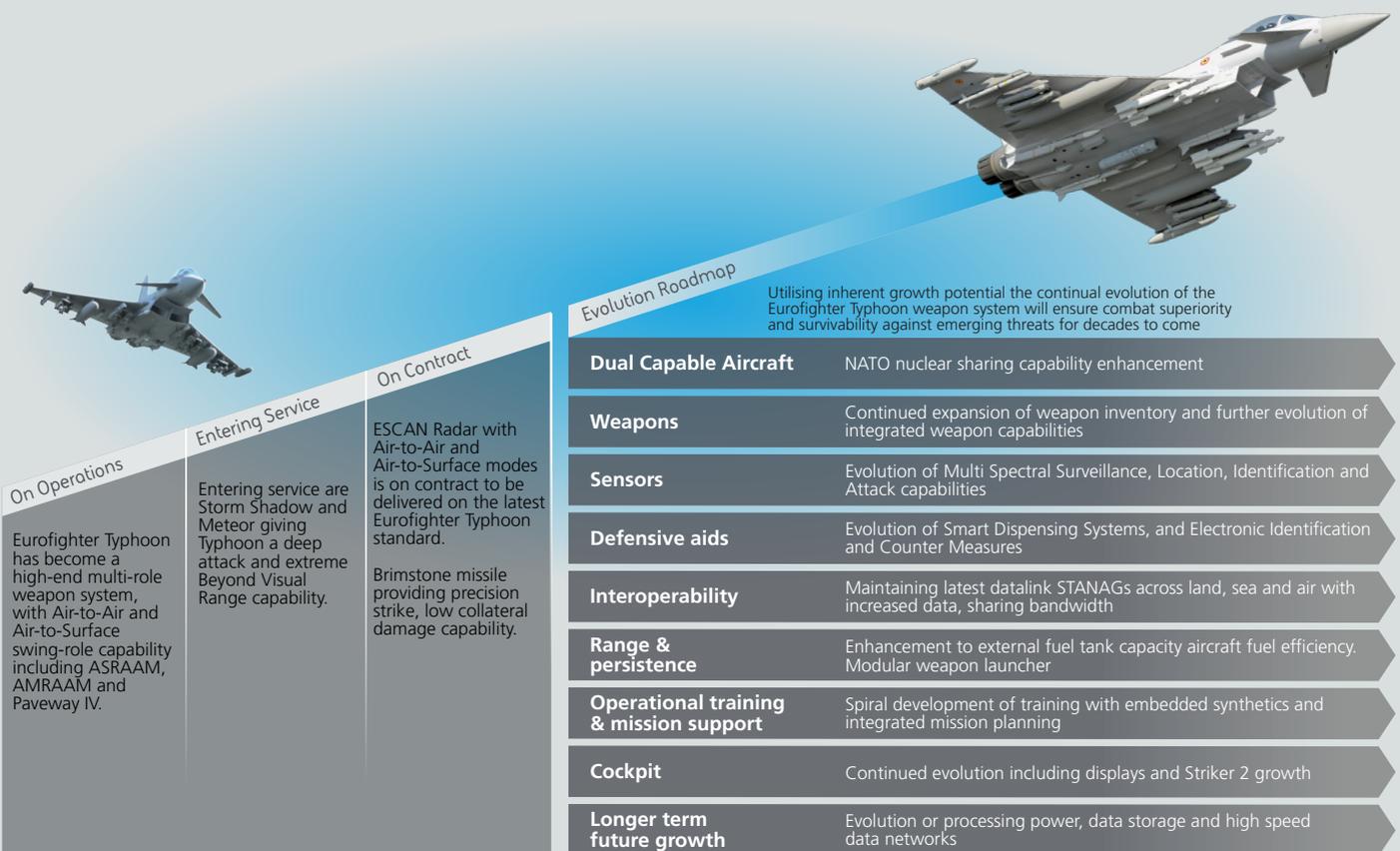


- Our solution is designed to minimise capital expenditure by drawing from the RAF's existing support infrastructure, spares pool and support services.
- The lowest cost per flying hour for a next generation combat aircraft through the independently proven, most cost-effective support service.
- To alleviate any budgetary pressures in the early years a financing package guaranteed by the UK's national export credit agency is available if required.

Assured by the UK, with a strong voice for Belgium

Combat-proven and future-proofed capability.

Belgian Defence will benefit from an aircraft that has been operational for 10 years and will fly the latest standard of RAF aircraft throughout the Capability Transition Period. Thereafter, Belgian Defence will have a voice in the future evolution of Eurofighter Typhoon, co-operating with the RAF as operational requirements evolve, and new technologies become available.



Strategic Partnership

In meeting all of the ACCaP requirements, Eurofighter Typhoon provides an operationally proven, effective, and low risk combat capability transition with low capital expenditure, and the most cost effective support arrangements through-life. It enables Belgium to develop sovereign control in areas of critical military capability expertise and addresses all of Belgium's articulated Essential Security Interests.

Our proposal offers a unique and enduring partnership between the BAC and the RAF, and commits to significant investment in an industrial research and development agenda to develop unique, world leading, manufacturing technologies that will position Belgium for partnership in a next generation European combat aircraft programme, with key European partners. Additionally, it offers the opportunity to establish a National Network Cyber Centre capability to protect vital sectors of the Belgian Economy, in cooperation with the UK. Through Eurofighter Typhoon, our proposal offers Belgium a strategic defence, security and industrial partnership with the UK and Eurofighter Typhoon partner nations for decades to come.



Ministry
of Defence



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