

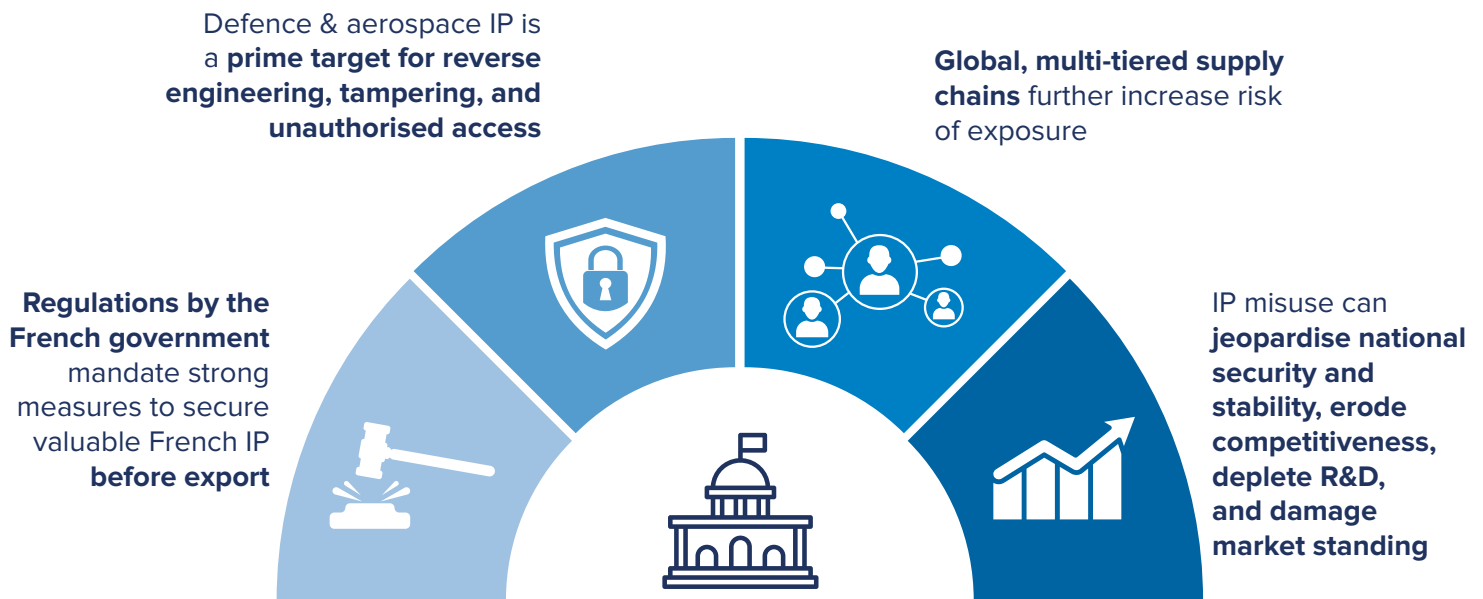


# **IP PROTECTION FOR EXPORT CONTROL**

**SAFEGUARD SENSITIVE DEFENCE  
AND AEROSPACE INNOVATIONS  
AGAINST CYBER ESPIONAGE**

## ..... Navigating complex compliance and security challenges

Safeguarding sensitive technologies against cyber espionage in the defence and aerospace industry is critical and challenging- especially when **exporting** these **technologies abroad**.



### Export your defence & space technology abroad with confidence

At **Quarkslab**, we have **successfully worked with defence manufacturers and the French government authorities** to define **robust protection mechanisms** to safeguard sensitive intellectual property.

Our software solution **QShield** is a **sovereign, proven, and recommended solution** to secure your sensitive IP and **meet the stringent export control technological requirements**.

## ..... Shield your sensitive IP and applications against static and dynamic attacks

▶ **Code obfuscation** is a **proven** and **effective technique** for safeguarding sensitive intellectual property, offering **robust protection against reverse engineering and unauthorized access**.

▶ QShield **transforms the code into a complex and unreadable form**, making it significantly **harder for attackers to understand, reverse engineer, or misuse the underlying logic and algorithms**.

▶ In addition, QShield can inject **Runtime Application Self Protection (RASP)** within the app to detect and respond to **tampering or misuse in real time**, ensuring the application remains secure and functions correctly.



### **Trusted and recommended security**

- ▶ QShield meets French government requirements for exporting technology in defence and space sectors.
- ▶ Helps secure authorisation for exporting French intellectual property (IP).
- ▶ Proven success with leading defence and aerospace organizations in France.
- ▶ Advanced code protection applicable across various devices and use cases (e.g., simulators, drones, military IoT, navigation software, communication equipment).
- ▶ Ensures confidentiality and integrity of sensitive applications, protecting against malicious access.

## OBFUSCATION PASSES

**Supported Environments:** Android, iOS, Linux, MacOS, Windows, Baremetal

**Supported Languages:** C, C++, Objective C, Java, Kotlin

### Comprehensive Protection

- ▶ **Control Flow Protection:** Safeguards the control flow graph, making it harder to decipher
- ▶ **Data Protection:** Protects constants and arrays
- ▶ **Call Graph Protection:** Protects the function call graph
- ▶ **Operations Protection:** Protects the operations in functions

### Customisable Obfuscation

- ▶ Customise protection levels and performance impact.
- ▶ Apply obfuscations probabilistically or systematically.
- ▶ Combine passes to create unique schemes for different codes or versions.
- ▶ Generate countless unique obfuscation schemes to boost security.

## RUNTIME APP SELF PROTECTIONS (RASP)

**Supported Environments:** Android, iOS, Linux, MacOS

**Supported Languages:** C, C++, Objective C, Java, Kotlin

RASP protects the app against its environment and adjusts its behavior accordingly. QShield injects checks at compile time to detect alterations by attackers, safeguarding against dynamic attacks.

- ▶ **Anti-native code lifting:** guarantees that attackers cannot execute the native libraries of an Android app outside the original application
- ▶ **Bind APIs:** protects shared libraries from being replaced and encodes them
- ▶ **Breakpoint Detection and anti-debugging**
- ▶ **Code Integrity Checks**
- ▶ **Date dependency:** limits code usage after a certain period
- ▶ **Anti Root/Jailbreak:** blocks code execution on rooted/jailbroken devices
- ▶ **Anti Virtual Machines:** prevents code execution in virtualized environments
- ▶ **Custom checks:** enables developers to define and perform runtime checks on specific conditions, signatures, files, and portions of their applications against modifications

## ..... **Why us?**

- ▶ Validated by French authorities and market proven
- ▶ Highly adaptive protection mechanisms - suitable for constrained environments (IoT), high-performance algorithms, real-time applications, complex firmware, and AI algorithms
- ▶ Easy to integrate in just a few days
- ▶ Implement from the first phase of design and conception, especially for connected devices
- ▶ More than 30 obfuscation passes
- ▶ Multiple environments and OS support
- ▶ Low code approach

## ..... **Quarkslab as your long term security partner**

Founded in 2011, Quarkslab is a French software company specializing in cybersecurity and the protection of software and connected systems.

We are a team of highly skilled engineers who possess extensive knowledge in compilation infrastructure, program analysis, software engineering, and cryptography. Our team includes reverse engineers, vulnerability researchers, and security engineers.

Our product evolves through an iterative process of attack and defence, resulting in constant improvement over time. This unique approach is why our customers invest in us as their long-term security partner.

## Learn more and check our latest resources

Whitepapers: <https://quarkslab.com/resources/>

On demand webinar: <https://www.quarkslab.com/webinar-channel/>

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