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The Institutional and Legal Framework of the European Union in Border Security Management

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Abstract: The security of the European Union's borders is an ongoing process that combines data sets from different systems, supported by advanced technology, real-time information sharing, and institutional cooperation. European border policy is based on a complex digital infrastructure consisting of large, interconnected IT systems that collect, store, and exchange data on individuals, documents, and events relevant to migration and security. The European Union has progressively developed these systems to compensate for the absence of internal border controls, to support the application of Schengen rules and asylum law, and to combat organized crime. Based on these considerations, this article sets out two scientific objectives: to identify key milestones in the evolution of European border policy and to provide a detailed overview of European information and surveillance systems in the field of borders and migration.

Keywords: security; borders; European Union; legal framework; European intelligence and surveillance systems

1. Border Security of the European Union – Definition and Dimensions

After the the terrorist attacks of 9/11, controversies resurfaced over the meaning and interpretation of border security both as an objective and as a policy system.

Although it is frequently used in academic literature and is a hot topic of public and legislative debate, border security does not have a unanimous definition. This aspect was noticed and appreciated by Radko Hokovský as “being an uncomfortable situation, since border security can mean different things for different authors” (Hokovský, 2016, p. 80).

Border security, as defined comprehensively, is “an effort to control cross-border movements, with the ultimate goal of reducing illegal flows and not (unduly) limiting legal flows” (Hokovský, 2016, p. 80).

After reviewing various definitions, Professor Mariana Rodica Țirlea proposed a comprehensive definition: “border security implies the participation of several states regarding the taking of real common collective measures of cooperation, collaboration, prevention and control at borders regarding persons, goods, goods, multinational operations for the prevention and security of threats, defense,

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political and environmental, in order to ensure stability, tranquility and peace of the states involved, including through the use of artificial intelligence” (Țirlea, 2025, p. 174).

Border security is a public policy option: how “open” or “closed” the border is, what types of mobility are encouraged or discouraged, and what criteria are used to decide who can enter and who is refused.

Regarding its dimensions, viewed dynamically, border security has evolved from a predominantly military logic to a largely administrative, functional, and increasingly digitalized one.

The first dimension is the **political** one. European Union border security is more than the activity carried out at a border crossing point, in front of the inspection desk; it has become a continuous process that combines datasets from different systems, supported by the advantages of advanced technology, real-time information exchange, and institutional cooperation.

The second dimension is the **legal** one. Border security is not exercised in a “legal vacuum” but within a complex regulatory framework that combines national, European, and international norms.

The third dimension, the **operational** dimension, concerns the practical organization and implementation of border control, namely: institutional structures, the distribution of competences, standard procedures, the use of technology, staff training, and inter-agency cooperation.

Border security also has a societal and ethical dimension, often less visible in official documents, but very present in the public debate. Border policies directly affect the lives of people living in border areas, but also of those who try to cross them.

Traditionally, a border is defined as the line that separates the territory of one state from that of another state or from areas with a distinct legal status, such as the high seas or demilitarized zones. In the contemporary context, particularly within the framework of European integration, borders can no longer be understood exclusively as fixed lines on a map; they are increasingly conceptualized as dynamic spaces where security, neighborhood, development, and human rights policies intersect.

European integration has radically changed the meaning and functions of the borders of the Member States, transforming them from mere lines of territorial separation into components of a common governance regime. The abolition of internal border controls, with the application of the Schengen acquis, has fundamentally changed this logic: internal borders have become, at least from a legal point of view, almost invisible, and the security of external borders has been redefined as a joint responsibility of the participating states (European Commission, 2014, p. 3).

European border policy has gradually developed, in parallel with the integration process and the enlargement of the European Union, moving from a purely national logic to a common one, based on rules, institutions and shared information systems. This policy has not evolved linearly, but in successive waves, influenced by crises and changes in the international context. The evolution of European border policy reflects the desire to maintain an area without internal border controls and the pressure to strengthen external border controls and respond quickly to various risks – from irregular migration to terrorism and hybrid threats.

2. Relevant European Border Agencies and Bodies

The European border security architecture is not only built on rules and treaties, but also on a network of specialised agencies, which put political decisions into practice and manage day-to-day cooperation between Member States.

At the heart of this institutional ecosystem is **the European Border and Coast Guard Agency (Frontex)**, defined as a centre of excellence for control activities at the EU's external borders. It shares information and expertise with all EU countries and neighbouring third countries affected by migration trends and cross-border crime. It was established in 2004 to help countries in the European Union and the Schengen area manage the EU's external borders and fight cross-border crime. Over time, it has become the main operational body of the European Union, with more than 2,000 standing corps officers and staff working at the EU's external borders, and with vehicles, planes and patrol boats supporting national authorities in border control and crime prevention activities (European Border and Coast Guard Agency (Frontex)).

The European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice (eu-LISA), established in 2011, with the aim of managing large-scale IT systems supporting the implementation of asylum, border management, migration and justice policies in the EU. Its activities are financed by a grant from the general budget of the European Union, a contribution from the associated countries to the implementation, application and development of the Schengen acquis and measures related to the Eurodac system, as well as financial contributions from EU Member States. It was set up under the ordinary legislative procedure, on the basis of a proposal from the European Commission, given that the Council may adopt measures to ensure administrative cooperation between the competent services of the Member States in the fields of freedom, security and justice; is a regulatory agency with legal personality (eu-LISA).

The European Police Union EUROPOL completes the picture from a law enforcement perspective, by supporting the Member States of the European Union in the fight against serious crime and terrorism, through the analysis of information, the exchange of data and the coordination of joint investigations (European Police Union EUROPOL).

If Frontex is the EU's "operational arm" at the border, eu-LISA can be seen as the "technological backbone" of the whole system. The cooperation between eu-LISA and Frontex aims at the development and testing of new IT systems, the exchange of statistics and technical expertise, and research and innovation in border technologies. The relationship with Europol allows the data processed in the systems managed by eu-LISA to be used in investigations into serious crime and terrorism, under the conditions laid down in EU law. Cooperation between Europol and Frontex has intensified in recent years, amid the recognition that irregular migration and organised crime are closely interconnected phenomena.

Frontex provides resources on the ground and coordinates border operations; eu-LISA manages the IT systems on which the verifications and data exchange are based; Europol connects borders with the fight against organised crime and terrorism.

3. European Information and Surveillance Systems in the Field of Borders and Migration

European border policy is increasingly relying on a complex digital infrastructure of large, interconnected IT systems that collect, store and exchange data on people, documents and events relevant to migration and security. The European Union has progressively developed these systems to compensate for the absence of internal border controls, to support the application of Schengen rules and the right to asylum, and to combat serious crime.

Among the most important systems are the Schengen Information System (SIS), the Visa Information System (VIS), the Eurodac System, the Entry/Exit System (EES), the European Travel Information and Authorisation System (ETIAS), and the European Criminal Records Information System (ECRIS-TCN),

which provides information on the criminal convictions of nationals of countries outside the European Union.

The Schengen Information System (SIS) is Europe's largest and most frequently used information exchange system on security and border management. Since there are no internal borders between Schengen countries in Europe, the SIS compensates for border controls and is the most successful instrument of cooperation for border, immigration, police, customs and judicial authorities in the EU and Schengen associated countries. In March 2023, the SIS was updated with new alerts, updated data and improved functionalities (Schengen Information System). This system fills the gap left by the removal of internal border controls, providing authorities in all states with a "common picture" with alerts necessary to maintain a high level of security in an area where borders are no longer visible at every crossing. At the same time, the fact that the system manages sensitive data about individuals opens up serious discussions about privacy and possible abuses, which is why access is reserved only to clearly designated institutions, and the way in which alerts are entered, modified and deleted is strictly regulated.

The Visa Information System (VIS) is the centralised system through which Schengen states exchange data on short-stay visas, long-stay visas and residence permits, connecting consulates in third countries and all external border crossing points, allowing both visa applications and visa verification at the border. Visa Information System - VIS - stores biographical and biometric data (fingerprints and a facial image) of visa applicants, together with the information provided in the application form. These data are used to verify that the person presenting a visa is its rightful holder, to prevent fraud and "visa shopping" (applying for visas in different countries to circumvent refusals) and to identify people found in the Schengen territory without documents or with false documents. The VIS also has an important function in the field of asylum: it helps to determine the Member State responsible for examining an asylum application, by checking any visas previously issued to the applicant. In addition, the system contributes to the prevention and investigation of terrorist and other serious crimes, within the framework established by EU legislation governing access to VIS data by law enforcement authorities.

The Eurodac system is the European Union's centralised biometric database designed to support the management of asylum applications and efforts to detect, investigate and prevent terrorism and serious crime; a useful tool for officers deployed at borders and in reception centres, but also for EU Member States which, even if they are not located at the EU's external borders, face a growing need to be able to store and compare information on irregular migrants who have been found to be staying illegally on their territory (Eurodac).

The Entry/Exit System (EES) is an automated IT system that allows the registration of third-country nationals travelling for a short stay (up to 90 days within any 180-day period) each time they cross the external borders of any of the following European countries using the system. The benefits of this system are diverse: more modern and efficient border controls, simpler and faster border crossings, prevention of irregular migration and increased security in the Schengen area. For travellers, the introduction of the EES represents a significant change in the border-crossing experience: instead of a manual stamp, they will be subject to document scanning and, in some cases, biometric data collection, including through the use of automatic gates. From a data protection perspective, the system is accompanied by detailed rules on storage duration and access to information, but the expansion of biometric data collection inevitably raises questions in academia and civil society as well.

European Travel Information and Authorisation System (ETIAS) is an automated IT system created to identify any security risk, illegal migration or epidemic posed by visa-exempt visitors travelling to

the Schengen area or Cyprus, while ensuring fundamental rights and data protection. Essentially, ETIAS introduces a new condition for entry into the Schengen area: before travelling, people from certain visa-exempt countries must fill in an online application for authorisation, providing data on identity, travel document, residence, contact details and answers to some security questions. With a valid ETIAS travel authorization, you can enter the territory of these European countries as many times as you want for short-term stays – usually no more than 90 days within any 180-day period. However, entry is not guaranteed.

European Criminal Records Information System – conviction information on third-country nationals (ECRIS-TCN) is a system for identifying which Member States of the European Union hold information on previous criminal convictions of third-country nationals (non-EU citizens) and stateless persons European Criminal Records Information System – conviction information on third-country nationals (ECRIS-TCN). The main purpose of the ECRIS-TCN is to enable national authorities to quickly identify in which Member States there is information on the previous convictions of a person from a third country. The system stores a limited set of identification data (including biometric data, where necessary), and when a “match” occurs, the interested state can use the ECRIS-TCN framework to request full details of the convictions directly from the identified state or states.

The interoperability of these surveillance systems brings a gain in efficiency and coherence, but it comes with a set of challenges that cannot be ignored (personal data protection, cybersecurity, democratic control, etc.).

4. Conclusions

Border security refers the set of policies, rules, institutions, procedures, and technologies through which a state or a regional entity, such as the European Union, controls the flows of people and goods entering and leaving its territory, with the aim of preventing and countering perceived risks to public policy, internal security and the integrity of the legal system.

From a geopolitical perspective, the borders of the European Union function simultaneously as zones of contact, filtering, and projection of influence between the integrated European space and its neighbouring regions.

The effectiveness of the European Union’s border security policy is closely linked to the degree of integration of digital technologies and the effective functioning of interoperable information systems.

Taken together, these three agencies (Frontex, eu-LISA and EUROPOL) show that border security in the European Union is the result of a combination of operational action, technological infrastructure and intelligence analysis.

The European Union has progressively developed a number of border and migration information and surveillance systems to compensate for the absence of internal border controls, to support the application of Schengen rules and the right to asylum, and to combat serious crime.

In the literature, the relationship between interoperability, security efficiency and the protection of fundamental rights is still addressed piecemeal. There are situations in which the analyses focus either on the technical and operational aspects, or on the legal and data protection dimension, without sufficiently addressing them.

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