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Determining the technical and operational framework of the European Border Surveillance System (EUROSUR) and the actions to be taken for its establishment

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1. INTRODUCTION

The progress towards the establishment of the European Border Surveillance System ('EUROSUR') has been significant, both at a political and technical level, since the European Commission presented its roadmap for the development of EUROSUR in 2008 ('2008 roadmap').[1] EUROSUR will gradually establish a mechanism whereby Member States' authorities carrying out border surveillance can cooperate and share operational information with one other and with FRONTEX. This will reinforce the control of the external border of the Schengen area, especially its southern maritime and eastern land borders, and step up the fight against irregular migration and cross-border crime.

The political priority given to EUROSUR was confirmed by the Stockholm Programme[2] and the Action Plan for its implementation.[3] Under the Stockholm Programme the Council invited the Commission to put forward proposals for meeting the EUROSUR objectives. These objectives are the establishment of a system using modern technologies that supports Member States, promotes interoperability and uniform border surveillance standards and enables Member States and FRONTEX to share surveillance data without delay. Development of EUROSUR is also recognised as one of the key initiatives under the Commissions' Communication on Internal Security Strategy[4].

Following its Conclusions of June 2008, the Council in February 2010 called on the Member States to implement the steps set out in the 2008 roadmap in order to reinforce interagency cooperation and enhance the Member States' border surveillance capabilities as soon as possible.[5] For this purpose, the EUROSUR network should be operational on a pilot basis as of 2011, involving as many Member States of the southern and eastern external borders as possible. On the basis of a legislative proposal, which the Commission intends to table in 2011, the EUROSUR framework should be consolidated by 2013.

Over the period 2008 to 2010, the Member States, FRONTEX and the Commission defined the main technical components of EUROSUR. They will test and validate these components in pilot and demonstration projects starting in 2010 to 2011 with the support of industry.

The purpose of this Commission Staff Working Paper is to describe the objective and scope of EUROSUR and its technical and operational framework, and to highlight the main actions which must be taken to have EUROSUR operational by 2013. This

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[1] Communication examining the creation of a European Border Surveillance System (EUROSUR), COM(2008) 68 final of 13 February 2008.
[2] The Stockholm Programme – An open and secure Europe serving and protecting the citizens, 2 December 2009, OJ C 115/1.
[3] Communication on delivering an Area of Freedom, Security and Justice for Europe's citizens: Action Plan Implementing the Stockholm Programme, COM(2010) 171 final of 20 April 2010.
[4] Communication COM(2010) 673 final of 22 November 2010 titled "The EU Internal Security Strategy in Action: Five steps towards a safer Europe"
[5] JHA Council Conclusions of 5-6 June 2008 and of 25-26 February 2010.

document details the progress made in developing EUROSUR up to October 2010. It therefore complements the 2009 progress report.[6]

2. **OBJECTIVE AND SCOPE OF EUROSUR**

EUROSUR will establish an *information sharing and cooperation mechanism* enabling Member States' authorities carrying out border surveillance activities and FRONTEX to collaborate at tactical, operational and strategic levels. The aim is to:

– Increase internal security of the EU by preventing cross-border crime;
– Reduce the number of irregular migrants entering the Schengen area undetected;
– Considerably reduce the unacceptable death toll of migrants at sea.

EUROSUR will therefore provide Member States with an operational and technical framework that increases their situational awareness and improves the reaction capability of national authorities surveying the external borders of the EU Member States.

EUROSUR should also be used as a mechanism to step up cooperation between national law enforcement authorities inside and between Member States (border guards, police, customs, coast guards etc.) for internal security purposes.

Careful attention is also being paid to create synergies with the European Pact to combat international drug trafficking and with the activities of other sectors like maritime transport, which has already set up European reporting systems (e.g. SafeSeaNet) that are being taken into account in the development of EUROSUR.

The scope of EUROSUR is at present limited to the surveillance of the southern and south-western maritime and the eastern land borders of the Schengen area. However, once the EUROSUR framework has been properly established, the system may be extended to all Schengen States with external land and maritime borders.

3. **EUROSUR FRAMEWORK**

To achieve these objectives, EUROSUR will provide Member States with a common technical (e.g. infrastructure) and operational framework (e.g. workflow).

The key components of the EUROSUR *technical framework* are the following:

– *A national coordination centre,* to be set up by each Member State participating in EUROSUR, coordinating 24/7 the activities of all national authorities carrying out external border surveillance tasks and exchanging information with other national coordination centres and FRONTEX. The national coordination centres form the backbone of EUROSUR.

– *FRONTEX Situation Centre* provides the national coordination centres with services such as the common application of surveillance tools.

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[6]   SEC(2009) 1265 final of 24 September 2010, covering the period from February 2008 until July 2009.

– *EUROSUR network* provides communication tools and enables data exchange between the national coordination centres and FRONTEX.

The EUROSUR *operational framework* consists of rules for sharing information between the national coordination centres and FRONTEX via the following *'situational pictures'*:

– *National Situational Pictures* consist of information collected from local situational pictures and from different national authorities, and intelligence gathered, for example, from the Common Pre-Frontier Intelligence Picture. It will be managed by the national coordination centre.

– *European Situational Picture* includes selected information from the national situational pictures, the Common Pre-Frontier Intelligence Picture and jointly applied surveillance tools. It will be managed by FRONTEX.

– *Common Pre-Frontier Intelligence Picture* contains information and intelligence on the pre-frontier area which is of relevance for the prevention of irregular migration and cross-border crime. It will be managed by FRONTEX.

4. **ROLES OF THE DIFFERENT ACTORS**

The development of EUROSUR has been initiated by the European Commission in close consultation with the Member States and FRONTEX. Since 2008, several technical expert groups have been set up, consisting of experts from the Commission, Member States and relevant European agencies[7]. Their task is to develop the different components of EUROSUR. Exercising its right of initiative, the Commission intends to present a legislative proposal for EUROSUR in 2011.

EU funding provided under the External Borders Fund, the Schengen Facility and the 7th Framework Programme for research and development, as well as the FRONTEX budget are being used to support the establishment of the EUROSUR framework.

Due to the decentralised approach followed in EUROSUR, Member States are the key players in its implementation. Supported by EU funding, the major part of investments, which concern in particular the setting up and upgrading of the national coordination centres and national border surveillance systems, are done at national level. In line with the principle of subsidiarity, only selected elements of the EUROSUR framework, such as the EUROSUR network, are being done at European level.

The Council is currently negotiating amendments to the FRONTEX Regulation, one of which is that FRONTEX should provide the necessary assistance to the development and operation of EUROSUR.[8] The role of FRONTEX in EUROSUR is

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[7]   FRONTEX, European Maritime Safety Agency, European Space Agency, EU Satellite Centre, European Space Agency.
[8]   See Article 2(1)(i) of the proposal for a Regulation of the European Parliament and the Council amending Council Regulation (EC) No 2007/2004 establishing a European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union (FRONTEX), COM(2010) 61 final of 24 February 2010.

meant to grow steadily once it is providing services to the national coordination centres, such as administering the EUROSUR network, ensuring the common application of surveillance tools and providing the common pre-frontier intelligence picture.

A major factor for the success of EUROSUR will be the active involvement of neighbouring third countries. However, EUROSUR has to be first established among the EU's Member States, before neighbouring third countries can be invited to join this cooperation.

While the EUROSUR development is done mainly by the Commission, in close cooperation with the Member States and FRONTEX, industry and research also play an important role in developing, testing and implementing the system.

5. **ACHIEVEMENTS AND CHALLENGES TO DATE**

5.1. <u>*Step 1*</u>: *Providing the essential border surveillance infrastructure at national level*

During the reporting period, six more Member States have established national coordination centres and made them operational.

Member States have continued using the External Borders Fund in line with Priority 2 of the strategic guidelines for the External Borders Fund[9]. Under this priority, the EU may fund up to 75% of the costs for establishing or further developing the national coordination centres and national border surveillance systems.

In December 2009, FRONTEX presented its *risk assessment* identifying those parts of the Member States' external borders which should be covered by a stationary national surveillance system. This risk assessment also showed that the plans presented by the Member States in the context of the External Borders Fund generally match the FRONTEX assessment.

From January 2009 to January 2010, an external contractor carried out a *technical study*[10] to develop the key concepts of EUROSUR, in particular the technical and management concepts for establishing or further developing national border surveillance systems and national coordination centres.

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[9] Commission Decision of 27.8.2007 implementing Decision No 574/2007/EC of the European Parliament and of the Council as regards the adoption of strategic guidelines for 2007 to 2013, OJ L 233/3 of 5.9.2007.

[10] Technical study on developing concepts for border surveillance infrastructure, a secure communication network and a pre-frontier intelligence picture within the framework of a EUROSUR (EUROSUR technical study). Main contractor: ESG. Subcontractors: EADS, SELEX, Thales. Consultants: SECUNET, University of the German Federal Army. The study was funded under the External Borders Fund.

5.2. *Step 2: Communication network between the national coordination centres including FRONTEX*

The abovementioned technical study defined the architecture and the IT security specifications for the EUROSUR communication network. The network shall provide communication tools and enable electronic data exchange in order to send, receive and process non-classified and classified information 24/7 close to real-time. The network architecture, allowing for operational information to be exchanged bilaterally and multilaterally up to the level of EU Restricted, foresees that national coordination centres can be connected with minimum effort and cost.

In November 2009, six Member States[11] and FRONTEX participated in a pilot demonstration. This involved testing some of the applications for the EUROSUR network and the Common Pre-Frontier Intelligence Picture in a 'test bed' provided by the contractor of the EUROSUR technical study.

In December 2009, FRONTEX began preparing a pilot project to test the network with these six Member States in daily practice. For this purpose, FRONTEX started elaborating a common data model for the EUROSUR information exchange in consultation with the participating Member States.

At the beginning of November 2010, FRONTEX signed a contract with an external contractor who will support the technical implementation of the pilot project on the EUROSUR network.

The EUROSUR network will be decentralised, meaning that information will be physically managed by each national coordination centre without being uploaded to a central server.

Nevertheless, certain centralised components may be required to enable the Member States and FRONTEX to share information using common standards and products. FRONTEX will therefore be responsible for the technical administration of the network, such as managing the crypto components.

5.3. *Step 3: Support to neighbouring third countries for the setting up of border surveillance infrastructure*

The context for this step is set by the overall external dimension of migration as defined by the global approach as well as by the Internal Security Strategy. It will therefore build on the EU's existing cooperation with third countries and the instruments available in that context, bearing in mind that under the current financial perspective the EU has only limited funds for setting up the needed border surveillance infrastructure in neighbouring third countries.

Nonetheless, the EU has provided considerable funding to the candidate countries for EU accession to improve the national border surveillance capabilities. Furthermore, the visa liberalisation dialogue has proven to be a successful tool for reform, in particular in the Western Balkan countries. When implementing EUROSUR,

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[11]   Finland, France, Italy, Poland, Slovakia, Spain.

attention will be paid to these activities and to existing regional cooperation mechanisms.

A concrete example of how such support, leading to closer cooperation, could be given is the SEAHORSE network which is operational between Spain, Portugal, Mauretania, Senegal and Cap Verde. Gambia, Guinea Bissau and Morocco joined the SEAHORSE network in November 2010. SEAHORSE could be used as a model for setting up a similar network between Member States and neighbouring third countries in the Mediterranean Sea.

Such regional networks could be used to exchange information relevant for border surveillance with neighbouring third countries in a regular and structured manner. By using the national coordination centres of the participating Member States as a gateway, the neighbouring third countries could not only provide, but also receive relevant data and information from EUROSUR and the participating Member States.

In December 2009, FRONTEX presented a report on the existing and needed surveillance infrastructure in Senegal, Tunisia and Moldova.

5.4. *Step 4: Research and development to improve the performance of surveillance tools*

During the reporting period, under the 7th Framework Programme for research and development (Security Research Theme) a number of border surveillance projects, such as AMASS,[12] GLOBE,[13] OPERAMAR,[14] TALOS[15] and WIMASS[16] started to deliver first results which shall be taken into account when developing EUROSUR.

Further relevant projects have been launched just recently, such as OPARUS,[17] and specifically on maritime border surveillance SEABILLA[18], I2C[19] and the demonstration project PERSEUS[20].

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[12] AMASS stands for "Autonomous MAritime Surveillance System", proposing an array of autonomous, automated surveillance platforms with sensors. The project started on 1 March 2008 and lasts for 42 months. It has a budget of MEUR 4, 9.

[13] GLOBE stands for "GLObal Border Environment", proposing a comprehensive framework for integrated border management. The project started on 1 July 2008 and lasted one year. It had a budget of almost MEUR 1.

[14] OPERAMAR stands for "An interoperable approach to EU maritime security management", addressing the interoperability of European and national assets in maritime security. The project started on 1 March 2008 and lasted for 15 months. It had of budget of EUR 669 000.

[15] TALOS stands for "Transportable autonomous patrol for land border surveillance", proposing the use of unmanned ground and air vehicles. The project started on 1 June 2008 and runs for 4 years. It has a budget of MEUR 19,9.

[16] WIMASS stands for "Wide maritime area airborne surveillance", aiming in particular at preparing the use of unmanned aerial vehicles. The project started on 1 December 2008 and runs for 36 months. It has a budget of MEUR 3,9.

[17] OPARUS stands for "OPen ARchitecture for Unmanned Aerial Vehicle-based Surveillance system", proposing an open architecture for unmanned border surveillance platforms. The project started on 1 September 2010 and runs for 18 months. It has a budget of MEUR 1,18.

[18] SEABILLA stands for "Sea border surveillance"., aiming at defining the architecture for systems integrating space, land, sea and air assets. The project started on 1 June 2010 and will run for 45 months. It has a budget of MEUR 15,5.

5.5   *Step 5: Common application of surveillance tools*

The following three *operational scenarios* for the common application of surveillance tools at EU level have been identified in the context of the European initiative for Global Monitoring for Environment and Security (GMES):[21]

1) Tracking of vessels on the high seas;
2) Punctual monitoring of selected neighbouring third-country ports and coasts;
3) Monitoring external land borders and the pre-frontier area.

A first GMES concept in support of EUROSUR has been elaborated in 2009 and discussed in 2010. The concept includes a detailed technical overview of surveillance sensors, capabilities and platforms, including unmanned aerial vehicles and satellites, and it also describes the applicability of technology to the operational scenarios.

A GMES concept of operations for the common application of surveillance tools in support of EUROSUR will be prepared in 2011. Furthermore, three projects will be launched under the FP7 programme (Space Theme) to assess the technical feasibility of this concept of operations.

5.6.   *Step 6: Common pre-frontier intelligence picture (CPIP)*

The architecture and specifications for the CPIP were drawn up in the EUROSUR technical study. The CPIP shall consist of four components:

1) Operational information, e.g. on detected targets and alerts.
2) Strategic key information, e.g. on routes and methods used by traffickers.
3) Knowledge base, i.e. a formalised description of vocabulary and methods.
4) Basic geodata, e.g. topographic and thematic maps and nautical charts.

In November 2009, selected applications for the CPIP were tested in a test bed provided by the contractor of the EUROSUR technical study.

5.7.   *Step 7: Creation of a common information sharing environment for border control and internal security purposes covering the Mediterranean Sea, the southern Atlantic Ocean (Canary Islands) and the Black Sea*

One of the objectives of EUROSUR is to increase the internal security of the European Union by combating cross-border crime. Now that the Treaty of Lisbon is

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[19]   I2C stands for "Integrated System for interoperable sensors and information sources for common abnormal vessel behaviour detection and collaborative identification of threat". The project started on 1 September 2010 and will run for 4 years. It has a budget of MEUR 15,9.

[20]   PERSEUS stands for "Protection of European seas and borders through the intelligent use of surveillance". It aims at implementing a large scale demonstration of a surveillance system of systems, integrating existing platforms and enhancing them with innovative capabilities. The project started on 1 January 2011 and will run for 54 months. It has a budget of MEUR 43,6.

[21]   GMES (Global Monitoring for Environment and Security) is the European Initiative for the establishment of a European capacity for Earth Observation. More information can be found at http://ec.europa.eu/gmes/index_en.htm and http://www.gmes.info.

in force, this objective is receiving more attention, as reflected in the Communication of the Commission on the EU Internal Security Strategy.[22]

In particular, synergies have been identified between two major initiatives on operational cooperation at the maritime external borders – the control of persons under the umbrella of FRONTEX and combating narcotics trafficking in the framework of the Maritime Analysis and Operation Centre – Narcotics (MAOC-N) and the Centre de Coordination pour la Lutte Anti-Drogue en Mediterranée (CeCLAD-M).

MAOC-N, based in Lisbon, is an inter-governmental law enforcement initiative comprising seven EU Member States[23] to tackle the trans-Atlantic drug smuggling from the Latin American and Caribbean countries to the European Union.

CeCLAD-M, based in Toulon, is another anti-narcotics law enforcement platform, aimed at intercepting drug trafficking from Northern and Western Africa in the Western Mediterranean Sea.

5.8.   *Step 8: Creation of a common information sharing environment for the whole EU maritime domain*

In October 2009 the Commission adopted a Communication on the integration of maritime surveillance in the EU, outlining how the Common Information Sharing Environment ('CISE') could be developed using four guiding principles: [24]

1) An approach interlinking all user communities
2) Building a technical framework for interoperability and future integration
3) Information exchange between civilian and military authorities
4) Specific legal provisions

In November 2009, the General Affairs Council invited the Commission to present a roadmap towards the achievement of the Common Information Sharing Environment by the end of 2010 and to update it in 2011 in order to take into account the results of the BlueMassMed and MARSUNO pilot projects. The Council also requested the Commission to present in 2013 an evaluation of financial resources necessary to set up the Common Information Sharing Environment.[25]

The BlueMassMed and MARSUNO pilot projects were launched in December 2009. The first covers the Mediterranean Sea basin and its Atlantic approaches, and the second covers the north European sea basins.

In 2011, both pilot projects will test the capacity of Member States' authorities to exchange, in daily practice, surveillance and monitoring information on internal

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[22]   Communication COM(2010) 673 final of 22 November 2010 titled "The EU Internal Security Strategy in Action: Five steps towards a safer Europe".
[23]   Spain, France, Ireland, Italy, the Netherlands, Portugal and the United Kingdom.
[24]   Communication COM(2009) 538 of 15 October 2009 entitled "Towards the integration of maritime surveillance".
[25]   External Relations Council Conclusions of 17 November 2009 on integration of maritime surveillance.

security matters (border control, combating narcotics trafficking, fighting terrorism), and to carry out other tasks such as preventing marine pollution.

In October 2010, the Commission presented the 'Draft Roadmap towards establishing the Common Information Sharing Environment for the EU maritime domain'[26], consisting of the following six steps:

1) Identifying all user communities
2) Mapping of data sets and gap analysis for data exchange
3) Common data classification levels
4) Developing the supporting framework for the Common Information Sharing Environment
5) Establishing access rights
6) Ensuring respect of legal provisions

6.   ACTIONS TO BE TAKEN TO ESTABLISH EUROSUR

6.1.   Short-term

In close cooperation with the Member States and FRONTEX, the European Commission has identified the following actions that should be taken in the short-term to complete the technical and operational framework for EUROSUR:

– The FRONTEX situation centre should develop, implement and operate automated applications and provide services in line with the EUROSUR requirements gradually as of 2011.

– All Member States located at the southern maritime and eastern land borders of the EU should continue in their efforts to establish their national coordination centres until the end of 2011 and to have them fully operational by 2013 at the latest.

– FRONTEX should implement the pilot project on the communication network with the national coordination centres of six Member States in the first half of 2011.

– FRONTEX should extend the pilot project to the national coordination centres of at least another six Member States by the end of 2011.

– FRONTEX should ensure that the results of research and development are continuously used for developing EUROSUR.

– FRONTEX, the national coordination centres participating in the communication network and relevant EU agencies should start testing and validating selected services identified in the GMES concept of operations for the common application of surveillance tools in support of EUROSUR in 2011.

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[26]   Communication COM(2010) 584 final of 20 October 2010 entitled "Draft Roadmap towards establishing the Common Information Sharing Environment for the EU maritime domain".

– FRONTEX should provide, in 2011, on the basis of the EUROSUR technical study an implementation plan for gradually setting up the common pre-frontier intelligence picture, consisting of a basic service to be fully operational in 2013 and an extended service to be fully operational in 2015.

– FRONTEX, EUROPOL, MAOC-N and CeCLAD-M should launch in 2011, as proposed in the Commission Communication on the EU Internal Security Strategy, a pilot project to explore synergies on risk analysis and surveillance data in common areas of interest concerning different types of threats, such as drugs and people smuggling.

6.2. Long-term

In the light of the progress made between 2008 and 2010 and the abovementioned short-term actions, the Commission intends to table a legislative proposal for the establishment of EUROSUR at the end of 2011. This proposal shall define the objectives and scope of EUROSUR and provide a legal basis for the competences and tasks of the national coordination centres and of FRONTEX as well as for the cooperation and information exchange to be carried out among them.

The objective is to make EUROSUR operational by 2013.

This means that the national coordination centres of the Member States located at the eastern and southern external borders of the EU as well as the FRONTEX situation centre shall be fully operational on a daily basis, using a secure communication network for exchanging information and for coordinating their daily activities. FRONTEX shall provide selected services, such as the common application of surveillance tools, including satellite imagery, and information and intelligence on the pre-frontier area, to the national coordination centres.

It is important to improve the information exchange between different user communities in the field of maritime surveillance. To achieve this, the EU Member States, EU agencies and the Commission will, in the period 2011-2014, implement the abovementioned 'Roadmap for the establishment of the common information sharing environment for the EU maritime domain'.

By 2015, EUROSUR shall enable the national coordination centres to exchange – within the context of the envisaged common information sharing environment – relevant information with other communities with interests in the EU maritime domain, such as transport, fisheries, customs and defence.