Single European Sky: any changes in the liability framework?

Delphine Aurélie Laurence Defossez

Thesis submitted for assessment with a view to obtaining the degree of Master in Comparative, European and International Laws (LL.M.) of the European University Institute

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Supervisor

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Abstract

The purpose of this research is to provide a better understanding of the impact that the Single European Sky, and more broadly European air law, could have on the inter-Members relationship, with respect to liability issues. The aspects explored are its main aims, the 'old' regime of liability, the changes brought by the SES Regulation and finally, how it could be improved. By showing the advantages of the proposal, this research highlights the hypothesis that the Single European Sky will not bring any changes to the current liability framework; on the contrary, it will further blur the general picture by adding a layer of fragmentation.

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Legislation number	Title
Brussels I	Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters [2000] OJ L012/01 [hereinafter Brussels I Regulation]
Chicago Convention	Convention on International Civil Aviation, signed in Chicago on 7 December 1944. Doc 7300
Directive 85/374/ EEC	Directive 85/374/ EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] OJ L210/29 [hereinafter European Directive on product liability]
Directive 123/2006/ EC	Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on Services in the Internal Market. [2006] OJ L376/36 [hereinafter the service Directive]
Environmental Protection Act 1990	Environmental Protection Act 1990 (UK)
Eurocontrol	Final act of the diplomatic conference on the protocol consolidating the Eurocontrol International Convention relating to cooperation for the safety of air navigation of 13 December 1960, as variously amended. (27June 1997)

Legislation number	Title
Montreal Convention	Convention for the Unification of Certain Rules for International Carriage by Air, signed in Montreal on 28 May 1999. Doc 9740
Occupiers Liability Act 1957	Occupiers Liability Act 1957 (UK)
Occupiers Liability Act 1984	Occupiers Liability Act 1984 (UK)
Regulation 2027/97	Council Regulation (EC) No 2027/97 of 9 October 1997 on Air Carrier Liability in the Event of Accidents. [1997] OJ L 285/1
Regulation 889/2002	Regulation (EC) No 889/2002 of the European Parliament and the Council of 13 May 2002 amending Council Regulation (EC) No 2027/97 on air carrier liability in the event of accidents [2002] OJ L140/2 [hereinafter the air carrier liability Regulation]
Regulation 261/2004	Regulation (EC) No 261/2004 of the European Parliament and the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealing Regulation (EEC) No 295/91 [2004] OJ L46/1
Regulation 549/2004	Regulation (EC) 549/2004 of the European Parliament and the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation) [2004] OJ L96/1 [hereinafter the framework Regulation]

Legislation number	Title
Regulation 550/2004	Regulation (EC) 550/2004 of the European Parliament and the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation) [2004] OJ L96/10 [hereinafter the service provision Regulation]
Regulation 551/2004	Regulation (EC) 551/2004 of the European Parliament and the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky (the airspace Regulation) [2004] OJ L96/20 [hereinafter the airspace Regulation]
Regulation 552/2004	Regulation (EC) 552/2004 of the European Parliament and the Council of 10 March 2004 on the interoperability of the European Air Traffic Management Network (the interoperability Regulation) [2004] OJ L96/26 [hereinafter the interoperability Regulation]
Regulation 2096/2005	Commission Regulation (EC) No 2096/2005 of 20 December 2005 laying down common requirements for the provision of air navigation services. [2005] OJ L335/13 [hereinafter the common requirements Regulation]
Regulation 1070/2009	Regulation (EC) 1070/2009 of the European Parliament and the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system [2009] OJ L300/34

Legislation number	Title
Regulation 1035/2011	Commission implementing Regulation (EU) No 1035/2011 of 17 October 2011 laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No 691/2010 [2011] OJ L271/23 [hereinafter the common requirements Regulation]
Rome Convention 1952	Convention on damage caused by foreign aircraft to third parties on the surface, signed at Rome on 7 October 1952.
Rome II	Regulation (EC) No 864/2007 of the European Parliament and of the Council of 11 July 2007 on the law applicable to non-contractual obligations [2007] OJ L199/40 [hereinafter the Rome II Regulation]
TFEU	Consolidated Version of the Treaty on European Union [2008] OJ C115/13. [hereinafter TFEU]
Warsaw Convention	Convention for the Unification of Certain Rules Relating to International Carriage by Air, signed at Warsaw on 12 October 1929.

Table of agreements

Name of the agreement	Title
Agreement conferring powers to Eurocontrol	Accord relatif à la fourniture et à l'exploitation d'installations et des services de la circulation aérienne par Eurocontrol au centre de contrôle régional de Maastricht, signé à Bruxelles le 25 Novembre 1986. Entrée en vigeur en 1990. Signé par la République Fédérale d'Allemagnee, le Royaume de Belgique, le Grand-duché de Luxembourg, le Royaume des Pays-Bas et Eurocontol.
BALTIC FAB	Agreement on the establishment of the Baltic Functional Airspace Block between: the Republic of Poland and the Republic of Lithuania. Signed in Vilnus on the 17th of July 2012. [hereinafter Treaty establishing the Baltic FAB or the Baltic FAB Treaty/ agreement]
BLUE MED FAB	BLUE MED FAB State Level Agreement. Version 2 of the 28th of May 2012. [hereinafter Treaty establishing the BLUE MED FAB or the BLUE MED FAB Treaty/ agreement]
Danube FAB	DANUBE Functional Airspace Block ANSP cooperation agreement between Bulgarian Air Traffic Service Authority and Romanian Air Traffic Service Administration. [hereinafter Treaty establishing the Danube FAB or the Danube FAB Treaty/ agreement]

Name of the agreement	Title
Denmark-Sweden FAB (FAB DK-SE)	Agreement between the Government of the Kingdom of Sweden and the Government of the Kingdom of Denmark regarding the establishment of the Danish-Swedish Functional Airspace Block. Done at Brussels on the 17 th of December 2009. [hereinafter Treaty establishing the Danish-Swedish FAB or the Danish-Swedish FAB Treaty/ agreement]
FAB CE	Agreement on the establishment of Functional Airspace Block Central Europe. Done at Brdo pri Kranju on the 5 th of May 2011. [hereinafter Treaty establishing the FAB CE or the FAB CE Treaty/ agreement]
FABEC	Agreement relating to the establishment of the Functional Airspace Block Europe Central between the Federal Republic of Germany, the Kingdom of Belgium, the French Republic, the Grand Duchy of Luxembourg, the Kingdom of The Netherlands and the Swiss Confederation. Second edition of 18th of May 2010. [hereinafter Treaty establishing the FABEC or the FABEC Treaty/ agreement]

Name of the agreement	Title
NEFAB	Agreement on the establishment of the North European Functional Airspace Block between the Republic of Estonia, the Republic of Finland, the Republic of Latvia and the Kingdom of Norway. Signed in Tallinn on 4 June 2012. Edition 1.0 with explanatory note. [hereinafter Treaty establishing the NEFAB or the NEFAB Treaty/ agreement]
South West FAB (SW FAB)	Agreement on the establishment of the South West Functional Airspace Block (SW FAB) between the Republic of Portugal and the Kingdom of Spain. Draft of the 19th of June 2012. [hereinafter Treaty establishing the South West FAB or the South West FAB Treaty/ agreement]
UK-Ireland FAB	Memorandum of Understanding in relation to the establishment of the Functional Airspace Block between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of Ireland . Signed on the 25th of January 2012. [hereinafter Treaty establishing the UK-Ireland FAB or the UK-Ireland FAB Treaty/ agreement]

Table of abbreviations

Abbreviation	Term and Definition
ACAS	Airborne Collision Avoidance System means a navigation system for preventing collisions between aircraft that relies primarily on equipment carried on the aircraft itself, but which may make use of equipment already employed in the ground-based air-traffic control system.
ANS	Air Navigation Services means air traffic services: communication, navigation and surveillance services; meteorological services for air navigation; and aeronautical information services
ANSP	Air Navigation Service Provider means any public or private entity providing air navigation services for general air traffic.
ATC	Air Traffic Control means a service provided for the purpose of: (a) preventing collisions: – between aircraft, and – in the manoeuvring area between aircraft and obstructions; and (b) expediting and maintaining an orderly flow of air traffic
ATM	Air Traffic Management means the aggregation of airborne and ground based (Air Traffic Services , Airspace Management, Air Traffic Flow Management) functions required to ensure the safe and efficient movement of aircraft during all appropriate phases of operations.

Abbreviation	Term and Definition
ATPS	Air Traffic Service Providers is another word for ANSP
BATA	Bilateral Air Transport Agreements
FAB	Functional Airspace Block means an airspace block based on operational requirements, reflecting the need to ensure more integrated management of the airspace regardless of existing boundaries
ICAO	International Civil Aviation Organisaiton, as established by the 1944 Chicago Convention on International Civil Aviation
SES	Single European Sky
SESAR	Single European Sky ATM Research programme
TCAS II	Traffic (alert and) Collision Avoidance System is an ACAS that provides both Traffic Advisories (TA) and Resolution Advisories (RA)
TCAS RA	Traffic (alert and) Collision Avoidance System Resolution Advisories

Introduction

This research project intends to provide a better understanding of the impact the Single European Sky (SES), and more broadly European air law, could have on the liability issues between Member States. My thesis seeks to show that the Single European Sky will not bring any major changes to the current liability framework; on the contrary, it will further blur the general picture by adding a layer of fragmentation.

In the last few decades, the institutions of the European Union are more willing to push Europeanization to its maximum extent, whereas Member States have become increasingly protective towards the last bits of full sovereignty they exercise on fields that may possibly be harmonized by the Union without conflicting with the provisions of the Treaties. This conflict can be exemplified by looking at the Single European Sky, an ambitious project, but hardly a success. In fact this initiative was launched in 1999, but its intended outcome has not yet been achieved. Some progress has been obtained in 2004 through the enactment of four Regulations by the Commission, which have been revised in 2009 and supplemented by another Regulation. Yet, the Single European Sky is to become a reality.

We may say that the Single European Sky is the equivalent of the internal market but then in airspace as it aims to eliminate national borders in the sky. Instead of being divided into 28 countries there will only be nine blocks of States.

Before, the Commission began to legislate over the creation of a single sky, the situation within Europe was disastrously inefficient. The airspace was submitted to 15 different national air traffic control systems and divided into even more complicated sectors. As a consequence, airplanes were not always allowed to take the most direct routes to their destination, which is still the case today. This resulted not only in additional fuel costs and air control charges, t ultimately paid by the passengers, but also in serious environmental issues such as higher emission of CO2 due to an excessive consumption of fuel.

Given the needs and potential benefits of this project, one may wonder why the SES is still not yet completed and functioning. One reason for this delay may be imputed to the fact that some Member States are unwilling to give up their power over airspace control. One other reason is that the SES Regulations as they stand are not complete enough and leave many unresolved issues to be dealt with. For instance, since the SES will create a switch from national to supranational control, liability rules should be clearly determined, otherwise when a collision occurs major legal issues may be raised.

The more clearly defined the tasks are, the easiest it is to establish liability. This is, basically, where the Regulations of the Single European Sky, and in general the law regarding space, fails to be clear and concise. Not explicitly addressing liabilities is a first serious defect: 28 different national regimes exist, and the SES regulations do not provide a unified regime, nor does it establish clearly what national laws will be applicable. Instead, the relationships between the various actors are intricate and the distinctions between their tasks are blurry.

This uncertainty provides the background for the main research issue to be addressed in this thesis: *How will the liability framework change with the implementation of the Single European Sky?*

Two steps must be taken in answering the main question: First, I will consider how liability is dealt with today, before the implementation of the SES. Then I will analyse the novelties introduced by the SES, and specify how such novelties have an impact on the identification of who will be liable, for what kind of damage and to what extent.

Many articles have been published in the recent years on this topic. Most of themes articles focus on specific kinds of liabilities. In my view, it is important to offer a broader picture of the topic in order to discuss specific issues. Additionally, none provides a systematic analysis of the tasks allocated to different actors, a violation of which may result in a liability, under the SES regime. The thesis is only concerned with liability issues in cases of collisions, therefore the case of a bird becoming stuck

inside the engine of a plane and leading to a crash is out of the scope of this dissertation.

The development of my analysis of the liability questions in the Single European Sky takes the following path. First, a general introduction on the Single European Sky will be provided, illustrating the context and the purpose of SES. The reasons for the Commission to push the project towards implementation will be highlighted. I will also examine whether the SES is really needed or if, on the contrary, the situation may remain unchanged. Another chapter will be dedicated to the liability issues. This chapter will address various issues: first, the type of liability that can be found with respect to airspace law; second, the type of defects that could result into liability; finally, the liability of the different actors involved. The last section will examine both the liability of the actors involved as it was under the 'old' regime and how it is expected to be under SES regime, if any changes are to be noticed. Thirdly, I will turn to the problems that victims and States may encounter within a lawsuits or while filing a lawsuit. Finally, the last chapter concludes with some recommendations and remarks.

1. The concept behind the Single European Sky

The major problem currently faced by European airspace is its fragmentation, leading to delays, longer flights, inefficiency and huge divergences in the quality of safety standards.[1] The problem actually is the direct result of Air Traffic Management (ATM) being submitted to different legal systems.[2] It might be surprising to hear that there are still borders in the airspace, while one of the biggest achievements of the internal market was precisely the abolishment of borders. In other words, there is an internal market but there never has been one air market, even after the full liberalization of the market in 1997.[3] The segmentation of the European airspace is an obstacle to the full implementation of two fundamental European freedoms: the free movements of persons and goods.

This section will start by sketching the general situation which the European airspace is currently facing (1.1). Then the Regulations will be addressed to help the reader to understand the concept of the Single European Sky in order to avoid any misunderstanding of my claim (1.2). A brief history of the actions the Union took in order to ameliorate the situation in the airspace will be given(1.3). Then, the division of the FABs will be discussed (1.4). Some of the criticisms will be mentioned (1.5). The reason why the Commission wants it to be enumerated (1.6). Finally, the US system will be briefly discussed (1.7).

[1] European Commission Mobility and Transport, 'Functional Airspace Blocks (FABs)' <http://ec.europa.eu/transport/modes/air/single_european_sky/fab/> accessed 9 June 2014; Commission, 'Building the Single European Sky through functional airspace blocks: A mid-term status report' (Communication) COM (2007)101 final, p.5

[2] Belgocontrol, 'Ciel Unique Européen: en route vers l'Europe', <http://www.belgocontrol.be/belgoweb/publishing.nsf/Content/Single_European_Sky_FR> accessed 29 June 2014

[3] Andreas Loewenstein, *European Air Law: Towards a New System of International Air Transport Regulation* (Baden-Baden, Nomos Verlagsgesellschaft, 1991), p. 48; Daniel Calleja Crespo and Timothy Fenoulhet, 'The Single European Sky (SES): "Building Europe in the Sky"', in Daniel Calleja Crespo and Pablo Mendes de Leon (eds), *Achieving the Single European Sky: Goals and Challenges* (p.3-9, Kluwer Law International, 2011), p.3

1.1 Why do we need the SES?

Every day 26,000 aircrafts land at or depart from any given European airport.[4] The airports are already considered saturated. It has been predicted that by 2030 this amount will double, reaching nearly 16.9 million flights per year.[5] According to Eurocontrol[6], for the period 2011-2018, the increase in traffic flow will be around 16%.[7] European airports are not ready for this situation and there has been a cry for changes.[8] This inefficiency was caused by several factors, one of which being the complicated Air Traffic Management (ATM) and Air Navigation Service Providers (ANSPs) system.[9][10] The problem started in the 90s with the liberal packages allowing European carriers to freely operate routes within the Union, leading to congestion of some airports.[11] The losses generated by the antiquated ATM system, compared to other similar systems in the world, are assessed to be around 2-3 billion euro per

[4] 'Chaque jour, 26'000 avions se croisent au-dessus de l'Europe.' See Luigi Jorio, 'Ciel Unique pour voler plus sûr et moins cher' (*swissinfo*, 30 July 2013) <http://www.swissinfo.ch/fre/ciel-unique-pour-voler-plus-s%C3%BBr-et-moins-cher/36483300> accessed 29 June 2014; Nats, 'Single European Sky', <http://www.nats.aero/news/projects/ses/> accessed 29 June 2014; Eurocontrol, 'Single European Sky' <http://www.eurocontrol.int/dossiers/single-european-sky> accessed 29 June 2014; Banque Européenne d'Investissement, 'L'aviation Civile' (April 2013) <http://www.eib.org/attachments/thematic/civil_aviation_fr.pdf> accessed 29 June 2014, p.1

[5] Jean Weissenberger, 'New rules on EU airport noise restrictions' (*Library of the European Parliament*, 5 February 2013) <http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/120421/LDM_BRI(2013)120421_REV1_EN.pdf> accessed 29 June 2014, p. 1; Banque Européenne d'investissement (n 4), p.1; SESAR Joint Undertaking, 'Sesar: the future of flying' <https://www.youtube.com/watch?v=k-2G_vxso9g> accessed 3 July 2014

[6] Eurocontrol is the European Organisation for the Safety of Air Navigation, an international organisation founded in 1960. It currently has 40 member states and working on improving the air traffic management. It has own treaty. See: Eurocontrol <https://www.eurocontrol.int/> accessed 29 June 2014

[7] Weissenberger (n 5), p.1

[8] Banque Européenne d'Investissement (n 4), p.1; Commission, 'Single European Sky II: towards more sustainable and better performing aviation' (Communication) COM (2008) 389/2, p.2

[9] Air traffic management (ATM) is about the process, procedures and resources which come into play to make sure that aircraft are safely guided in the skies and on the ground. Air traffic management is composed of a number of complementary systems: air management, air traffic flow and capacity management and air traffic control.
Air Navigation Service Provider is the entity that manages air traffic on behalf of a company, region or country. See: Eurocontrol (n 6)

[10] Julian Moxon, 'Single European Sky still fragmented' (*Ainoline*, 7 June 2013) <http://www.ainonline.com/aviation-news/paris-air-show/2013-06-17/single-european-sky-still-fragmented> accessed 29 June 2014

[11] Pablo Mendes de Leon, 'Liberal of air transport in Europe', in Doo Hwan Kim and Chia-Jui Cheng (eds), *The utilization of the world's air space and free outer space in the 21st century: proceedings of the International Conference on Air and Space Policy, Law and Industry for the 21st Century held in Seoul from 23-25 June 1997* (p.15-21, Kluwer Law International, 2000), p.17

year.[12] And, under the current system, the risks of delays are higher.[13] Therefore, the infrastructure of the ATM system must be modernized in order to meet the projected growth in capacity.[14]

Until recently, a plane could be serviced by as many different ANSPs, as countries it crossed.[15] These different ANSPs are subject to different set of rules, economic conditions and operational requirements.[16] Additionally, most ANSPs have designed their own training schools and support functions. A direct result of the sovereign nature of the Air Navigation Service (ANS) is that the division of Air Traffic Control's sectors follows political boundaries, which creates even more constraints.[17] These detriments to efficiency and performance have an impact on costs and safety.[18] Currently, the costs of air traffic management represent 6 to 12 % of ticket prices.[19] Furthermore, the inefficiency of the European system costs the airline companies an estimated 5 billion euro per year[20], costs which are then passed on the final consumer. Even more striking, on average, each flight travels an additional 42 kilometers because no shorter route is available, which burns more kerosene and harms the environment.[21] Re-routing under the new system could save up to 10% of the kerosene currently used.[22] Therefore, the key solution to this problem is enhancing cooperation among Member States and raising the level of solidarity[23]. The Commission claims that the

[12] Eurocontrol, 'Single European Sky' (n 4)
[13] European Commission, 'Single Sky: Commission acts to unblock congestion in Europe's airspace' (Press Release IP/13/523, 11 June 2013) <http://europa.eu/rapid/press-release_IP-13-523_en.htm> accessed 29 June 2014
[14] Dave Young, Nadine Pilon and Lawrence Brom, 'Challenges Ahead for European Air Traffic' in Information Resources Management Association, *Regional Development: Concepts, Methodologies, Tools, and Applications* (Chapter 89, p. 1582-1603, IGI Global, 2012), p.1583
[15] Kenneth Button and Rui Neiva, 'Single European Sky and the functional airspace blocks: Will they improve economic efficiency?' (2013) 33 Journal of Air Transport Management 73, p.79
[16] Loewenstein (n 3), p.49; COM (2007)101 final (n 1), p.2
[17] Francis Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (2010) 35 Air & Space law 113, p.113
[18] Commission, 'Functional Airspace Blocks (FABs)' (n 1)
[19] European Commission, Press Release IP/13/523 (n 13)
[20] Christopher Lawless, 'Bounding the vision of a Single European Sky' (2014) 180 The Geographical Journal 76, p.76
[21] European Commission, Press Release IP/13/523 (n 13)
[22] Jorio (n 4); COM (2008) 389/2 (n 8), p.4; IATA, *A blueprint for the Single European Sky: delivering on safety, environment, capacity and cost-effectiveness* (White Paper, COM(96)57 final), p.2
[23] Moxon (n 10); Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.114; Commission, 'Functional Airspace Blocks (FABs)' (n 1)

SES system will reduce flight time and increase flight safety.[24][25] The cost involved for the air navigation service constituted more than the half of the all the overall cost related to air traffic control management.[26] The main actors involved in the discussion agreed that those service costs should be reduced.

Additionally, the ATM technologies have not really evolved since the 1970's, which impedes interoperability and the true exchange of information.[27] Therefore, the main role of Single European Sky ATM Research programme (SESAR Joint Undertaking) is to help modernise the European ATM system by regrouping research and design procedures.[28] The modernisation of the system should lead to its optimization. In addition, the simplification of the system and the interoperability between air traffic controllers will lower the risk of collision.[29]

1.2 The solution the Union found

In order to remedy to the fragmentation of the airspace, the Commission has proposed to implement the Single European Sky (SES). Initially, the SES was meant to address the dramatic growth in air travel, by creating a legislative framework for EU aviation.[30] The cornerstone idea of the SES Regulations was to create a so-called functional airspace blocks or FABs. These FABs are considered as being able to satisfy the growing capacity requirements of all airspace users with minimum delay by

[24] For this reason the Commission creates the European Aviation Safety Programme (EASP). 'The main objective of the Safety Plan is to create a common focus on European aviation safety issues as a continuation of the European work to increase aviation safety and to comply with ICAO standards.'
See European Aviation Safety Agency, 'European Aviation Safety Plan 2012-2015' (2012) TE.GEN.00400-002 final<http://www.easa.europa.eu/system/files/dfu/sms-docs-European-Aviation-Safety-Plan-(EASp)-2012-2015--v1.0-FINAL.pdf> (accessed on 3 July 2014), p.4

[25] Jorio (n 4)

[26] 'Single European Sky for faster and more convenient air travel' (Lithuanian Presidency of the Council of the European Union 2013, 22 August 2013) <http://www.eu2013.lt/en/news/features/single-european-sky-for-faster-and-more-convenient-air-travel> accessed 29 June 2014

[27] Moxon (n 10)

[28] Eurocontrol, 'Single European Sky' (n 4); Delegation of the European Union to the United States, 'SESAR—Single European Sky Air Traffic Management Research' <http://www.euintheus.org/what-we-do/policy-areas/transportation/aviation/sesar-single-european-sky-air-traffic-management-research/> accessed 29 June 2014; SESAR Joint Undertaking, 'SESAR Releases: advancing ATM modernisation' (*SESAR Release)* <http://www.sesarju.eu/newsroom/sesar-spotlight/sesar-releases-advancing-atm-modernisation> accessed 29 June 2014; European Commission Mobility and Transport, 'What is the SESAR project?' < http://ec.europa.eu/transport/modes/air/sesar/index_en.htm> accessed 29 June 2014

[29] Jorio (n 4)

[30] COM (2008) 389/2 (n 8), p.2

managing the air traffic more dynamically, which will produce as immediate consequences an increase in efficiency.[31] These blocks would no longer be divided with regard to national border but rather according to traffic flows and efficiency based criteria.[32] The route-by-route, as opposed to state-by-state strategy will more accurately reflect the reality of the airspace system.[33] Consequently, the airspace will be managed more rationally.[34] Thus the FABs would contribute to meet the capacity requirements of airspace users, to reduce minimum delays, enabling more dynamic management of the air traffic, resulting in an increase in efficiency. Furthermore, the FABs are also regarded as the best solution for achieving the highest level of integration possible by maximizing cooperation.[35] In order to achieve this goal, the Union launched the proposal for SES in 1999.[36]

Currently the SES framework is composed of five Regulations. The first package of four was adopted in 2004. After having reviewed the progress of the SES in 2007, the Commission realized that some further actions were needed, resulting in the publication of a revised version in November 2009. To this revised version, a fifth Regulation was added.[37] The volcanic eruption in Iceland of 2010 clearly pinpointed the deficiencies of the system and boosted the debate about the proposal, as it was imperative to find solutions.[38]

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[31] Lawless (n 20), p.76; Eurocontrol, 'Evaluation of Functional Airspace Block (FAB) initiatives and their contribution to performance Improvement' (Performance Review Commission) FAB Evaluation (2008) <http://ec.europa.eu/transport/modes/air/studies/doc/traffic_management/evaluation_of_fabs_final_report.pdf> (accessed 3 July 2014); Button and Neiva (n 15), p.74; Belgocontrol, 'The Functional Airspace Blocks in the Single European Sky' <http://www.belgocontrol.be/belgoweb/publishing.nsf/AttachmentsByTitle/Background_on_FABs.pdf/$FILE/Background_on_FABs.pdf > accessed 29 June 2014, p.2

[32] Lawless (n 20), p.76; Mark Franklin, 'Sovereignty and Functional Airspace Blocks' (2007) 32 Air & Space law 425, p.425

[33] Alberto Alemanno, *Governing disasters: the challenges of emergency risk regulation* (Edward Elgar Publishing, 2011), p. 239

[34] Commission, 'Functional Airspace Blocks (FABs)' (n 1)

[35] Button and Neiva (n 15), p.75

[36] Joeri Meerts, 'A critical assessment of the Regulation 996/2010 of the European Parliament and the Council of the investigation and prevention of accidents and incidents in civil aviation' (LL.M. Master of Advanced Studies in European Law, Ghent University, 2012), p.7

[37] The coming into existence of the SES cannot be discussed in detail here. There is a large range of articles and books dedicated to the description of lengthy process that led to the drafting of the 5 regulations. See for instance: Niels van Antwerpen, 'Single European Sky' (2002) 27 Air & Space law 3; Calleja Crespo and Fenoulhet (n 3); Francis Schubert, 'The Single European Sky- Controversial Aspects of Cross-Border Service Provision' (2003) 28 Air & Space law 32

[38] Alemanno (n 33), p.239

The SES Regulations aim to improve and increase efficiency and safety throughout Europe. It is assumed that once the airspace system would be harmonised, air travel within the Union will be faster and more convenient.[39] Additionally, 5 interrelated pillars have been established: safety, performance, technology, airport capacity and human factors.[40]

The SES proposal, besides increasing efficiency and security, would provide direct advantages to passengers, for instance shorter flights and cheaper tickets. The airspace will be more tailored with respect to the passengers' needs rather than divided according to national borders, as it was before.[41]

The actual system will not be able to satisfy such demand; traffic flow, within Europe, will be doubled by 2030.[42] As a result, the Commission is trying to prevent a capacity shortage and even better; to triple the capacity of the airspace.[43] The Commissions aims to remedy this emerging problem while leaving a margin of error in case the growth predications were incorrect. It also leaves more time for the Commission to develop a new action plan for any additional increases in the European flight capacity.

Additionally, it is expected that the number of sectors will decline from their number of 650.[44] As a result, it will lead to the reduction in the number of control

[39] 'Single European Sky for faster and more convenient air travel' (n 26)
[40] Calleja Crespo and Fenoulhet (n 3), p.7-8
[41] Lawless (n 20), p.76
[42] 'Selon les prévisions, le trafic aérien devrait doubler d'ici à 2030. La plus grande difficulté consiste à faire en sorte que l'espace aérien européen puisse faire face à la croissance du trafic, tout en réduisant les coûts et en améliorant les performances.'
See: Banque Européenne d'Investissement (n 4), p.1
[43] IATA, *A blueprint for the Single European Sky: delivering on safety, environment, capacity and cost-effectiveness* (n 22), p.2 ; 'Le "Ciel unique européen", qu'est-ce que c'est?' (*le nouvel observateur social*) <http://tempsreel.nouvelobs.com/social/20130611.OBS2746/le-ciel-unique-europeen-qu-est-ce-que-c-est.html> accessed 29 June 2014; CAPA, 'Europe to take a third attempt at sorting out the Single European Sky'(26 October 2012) <http://centreforaviation.com/analysis/europe-to-take-a-third-attempt-at-sorting-out-the-single-european-sky-86383 > accessed 29 June 2014
[44] Moxon (n 10)

centers, which is one of the causes of the inefficiency. These changes should bring Europe closer to the American model.[45]

Perhaps surprisingly, however, in the proposal there is no mention of liability in the case of an accident. The system that is foreseen in the SES will lead to a shift from nationally based air traffic management to 'supra-national' management. Therefore, the question of liability is one of the most crucial to be addressed. One may expect that the nature of the risks inherent to the airspace system will be contingently redefined.[46]

A word of warning should be given: one should not believe that the SES will introduce an entirely new regime in which only one Air Navigation Service Provider (ANSP) will supply its services for the whole FAB. Article 8 of the Regulation 550/2004 requires each Member State to establish one exclusive ANSP for the airspace under its responsibility. Furthermore, in order to comply with their obligations flowing from international law, each Member State must have an ANSP. The only novelty that is brought by the proposal is that cross-border cooperation will be extended and hopefully, this will in turn lead to an even closer Europe. Consequently, one may wonder whether the regime as it was before the SES proposal will be changed or whether we will still find the same answers, making the topic of great interest for research.

[45] European Commission, Press Release IP/13/523 (n 13)
[46] Alemanno (n 33), p.239

1.3 What the Union already did to open airspace?

Before 1987 and the ruling of the CJEU in the case *Nouvelles Frontières*[47], the airspace market was protected and considered taboo by both national and supranational authorities.[48] As the result of some pressures and the willingness of the Commission to reform the air transport market since 1979[49], the Single European Act made the creation of a legal framework for aviation possible.[50]

Three packages of liberalization regulations were promulgated between 1987 and 1992.[51] However, soon after the liberalization of the market, it became obvious that the airspace was not managed efficiently. As a result, in 1994, the discussions began but it was not until 1999 that the Single European Sky proposal was launched.[52] In so doing, the Commission relied on Eurocontrol, one of its most important allies.[53] Eurocontrol's role as a central player in aviation grew in the 1990s.[54] One of its main aims was to increase coordination between air navigation services within the Union.

The SES will create a new division of the European airspace. In order to meet the objectives of the SES, the Member States are required to establish FABs, the crux of the SES[55], as stipulated in Article 5 of the SES Airspace Regulation (No 551/2004).[56]

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[47] Joined Cases 209 to 213/84 *Ministère public* v *Lucas Asjes and Others, Andrew Gray and Others, Andrew Gray and Others, Jacques Maillot and Others and Léo Ludwig and Others*

[48] Loewenstein (n 3), p.47; Alfonso Arroyo, 'Single European Sky and Functional Airspace Blocks'. (Directorate-General for Energy and Transport/Air Transport Directorate, Montreal, 2008) <http://legacy.icao.int/NetCentric/pres/A.Arroyo.pdf> accessed 1 March 2014, slide 3

[49] Commission, 'Contribution of the European Communities to the development of air transport services: Memorandum of the Commission' (Bulletin of the European Communities Supplement 5/79) COM (79) 311 final

[50] Paul Stephen Dempsey, *European aviation law* (Kluwer Law International, 2004), p.23; Loewenstein (n 3), p.48; Stacy K Weinberg, 'Liberalization of air transport: time for the EEC to unfasten its seatbelt' (1992) 13 University of Pennsylvania Journal of International Business Law 433, p.439

[51] Seth M Warner, 'Liberalize open skies: foreign investment and cabotage restrictions keep noncitizens in second class' (1993) 43 The American University law review 277, p.295; Loewenstein (n 3), p.48; Magnus Schmauch, *EU law on state aid to airlines : law, economics and policy* (Lexxion, 2012), p.18; Commission and the United States Department of Transportation, 'Transatlantic airline alliance: competitive issues and regulatory approaches' joint alliance report (2010), p.4

[52] Arroyo (n 48), slide 3

[53] Eurocontrol, 'Single European Sky' (n 4)

[54] Eurocontrol, 'History' <http://www.eurocontrol.int/articles/history> accessed 29 June 2014

[55] Button and Neiva (n 15), p.74

[56] However in the consolidated version, this article has been deleted and replaced by Article 9a which adopts a similar wording. The article was as followed: 'with a view to achieving maximum capacity and efficiency of the air traffic management network within the single European sky, and with a view to maintaining a high level of

However, it is only with the entry into force of Regulation 1070/2009 and Article 9a that a definition of, and article dedicated to the FABs was introduced, respectively.[57] Before, the only references to the FAB were in point 12 of the preamble and Article 5 of Regulation 551/2004. Even in the consolidated version which was introduced after Regulation 1070/2009 entered into force, the only definition of FAB is in Article 2(25) of the SES Framework Regulation (No 549/2004), which defines an FAB as an "airspace block based on operational requirements, reflecting the need to ensure more integrated management of the airspace regardless of existing boundaries". FABs are able to become the driving force for performance and will bring changes to the landscape of Air Traffic Management Service provisions.[58] But, its definition was only introduced in 2009 and their creation has not been without obstacles, both economic and political.[59] Additionally, the Member States have committed themselves to reaching the targets set out in a performance scheme adopted in January 2012.[60]

safety, the upper airspace shall be reconfigured into functional airspace blocks.' See: Commission, 'SES I and II consolidated: The 4 Regulations creating the Single European Sky' (2010) EC working paper <http://ec.europa.eu/transport/modes/air/single_european_sky/doc/2010_02_12_ses_i_and_ii_consolidated.pdf> accessed on 3 July 2014

[57] Before Article 5 of the Regulation 551/2004 introduced the idea of FAB but did not mention all the requirements of the FABs such as eco friendly.

[58] Commission, 'Functional Airspace Blocks (FABs)' (n 1)

[59] Due to the fact that Air Traffic Control is falling under the heading of State sovereignty, some Member States used it as an excuse to block cross-border integration. Retrieved from COM (2008) 389/2 (n 8), p.3

[60] European Commission Mobility and Transport, 'Performance' <http://ec.europa.eu/transport/modes/air/single_european_sky/performance_review_body_en.htm> accessed 29 June 2014

1.4 The division of the airspace in FABs

The Commission proposes to divide the European airspace into 9 FABs[61];

(1) Danish- Swedish FAB

(2) UK- Ireland

(3) FABEC (Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland)

(4) South West FAB (Portugal, Spain)

(5) BLUE MED FAB (Cyprus, Greece, Italy and Malta)

(6) Baltic FAB (Lithuania, Poland)

(7) FAB CE (Austria, Bosnia & Herzegovina, Croatia, Czech Republic, Hungary, Slovak Republic, Slovenia)

(8) Danube FAB (Bulgaria, Romania)

(9) North European FAB (Estonia, Finland, Latvia, and Norway).[62]

The first established FAB was between the UK and Ireland and became operational in July 2008.[63] Originally, Sweden, Denmark and Iceland should have been part of the North European FAB (NEFAB). Nevertheless, the Swedish and Danish Government preferred to establish cooperation only between their two States and create their own FAB. Therefore, Iceland is not currently part of any FAB. [64] Another striking fact is to be found in the Danube agreement, in which Article 14.1 leaves open the possibility of subdividing the area in a sector to maximize cooperation between ANS while the approval is left to the ANSP board of that FAB. A similar article can be found in Article 10.1 of the FAB CE under the heading of flexibility agreement. These articles might create problems because they allow two of the FABs to be differentiated from

[61] Button and Neiva (n 15), p.75
[62] Eurocontrol, FAB Evaluation (n 31), p.21; Button and Neiva (n 15), p.75; Belgocontrol, 'The Functional Airspace Blocks in the Single European Sky' (n 31), p.2
[63] IAA, 'UK-Ireland Functional Airspace Block' <https://www.iaa.ie/FAB> accessed 29 June 2014
[64] NEFAB, 'What is NEFAB?' <http://www.nefab.eu/> accessed 1 March 2014

the others, which could lead to more disparities. However, there is a safeguard that dictates that if a subdivision negates the essence of the FAB and leads to a situation similar to the one before its creation, then the agreement would be null and void because it would not comply with the service provision regulation. However, because the central Europe sectors were and are relatively small -their size depends on the amount of traffic flow one controller can keep track of- it is unlikely that radical changes will occur with regard to the number of sectors to render these sectors more dynamic.[65]

In order to have things moving smoothly and to avoid encountering similar refusals of cooperation from the Member States as in the past, the Commission set a deadline for the implementation of all FABs on the 4th of December 2012.[66] However, after a recent survey, the Commission realised not only that only two FABs have been established (UK-Ireland and Denmark- Sweden) and also that none of the nine foreseen FABs were functioning in an efficient way.[67] The Commission is not entirely satisfied by the functioning of the UK-Ireland FAB but its estimated benefits for 2008-2011 show a net improvement. Apparently, 48,000 tons of kerosene were saved during that period, which represents a decrease of 152,000 CO2.[68] As a result, the Union has decided to take measures against this rampant inaction by threatening to sanction Member States.[69]

It is notable that the most important actors, such as The Air Navigation Service Provider (ANSP), National Supervisory Authority (NSA) and States, have made considerable efforts in developing the SES initiative and in supporting the Commission's work.[70] As always, some governments have been committed to ensure the good functioning of the SES. Yet, the level of involvement of several countries has mostly depended on the profit the SES will bring to them specifically.

[65] Some sectors will be merged or split mostly above the borders (ground).
[66] Commission, 'Functional Airspace Blocks (FABs)' (n 1); Lawless (n 20), p.76
[67] Button and Neiva (n 15), p.75
[68] Nats, 'Single European Sky' (n 4)
[69] Lawless (n 20), p.76
[70] IAA (n 63)

1.5 The opinion of the opponent of the SES

The necessity for harmonization, or at very least, bringing of the Union closer through cooperation, is not disputed. Neither is the fact that we needed a pan-European solution. However, there are several skepticisms as to whether the FABs are in fact the *best* solution, or whether they were accepted only because the actors were desperate to find a solution. Some critics even suggest that the improvement the industry craves could actually not occur.[71] The opponents mostly refer to the failure of other air traffic management projects such as EATCHIP and ATM2000+. The story seems to repeat itself: the deadlines have been prolonged for EATCHIP and ATM2000+ and now also for the SES. Consequently, they fear that the SES proposal will fail in the same way. This concern is not without merit. The FABs should have been implemented by now and the deadline for implementation has slipped to an undetermined future date; moreover, airline companies and customers are the first to suffer from the inefficiency.[72] However, it should not be overlooked that two FABs are already implemented and functional and, the benefits are encouraging.[73]

A major critique is that the Commission has tried to establish a truly European project to harmonize the system of air traffic management but realizing this would never occur, they took a pragmatic approach, aiming instead to increase the level of cooperation between ANSPs. Detractors believe this ignores the realities and fundamental problems facing the European ATM system, and moreover, that this cooperation may result in strong alliances that will add an additional layer of fragmentation.[74]

They argue instead that SESAR alone could deal with the current shortcomings the European airspace.[75] SESAR is a European undertaking whose main tasks is to define

[71] Roger Wilco, 'Functional Airspace Blocks (FAB) – the EC's biggest blunder?'(*FAB News*, 30 April 2011) <http://www.roger-wilco.net/functional-airspace-blocks-fab-the-ec%E2%80%99s-biggest-blunder/> accessed 1 March 2014
[72] CAPA (n 43)
[73] Nats, 'Single European Sky' (n 4)
[74] Wilco (n 71)
[75] Ibid

European ATM system.[76] The reluctance of the ANSPs vanished when they realised that once SESAR materialized, they would have to join the movement if they did not want to be left behind. This enabled the ANSPs to group together and combine their forces to fight European solutions to the ATM problems with which they did not agree.[77]

Some said that the switch in the role of Eurocontrol, from a unique organisation providing ATM services, to manager of the ATM network in Europe[78], would destroy it, or at least considerably reduce its powers. The new role of Eurocontrol only gives it an advisory authority, which may suggest improvement to ANSPs and Member States.[79]

[76] Moxon (n 10)
[77] Wilco (n 71)
[78] Eurocontrol, 'Single European Sky' (n 4)
[79] Wilco (n 71)

1.6 Why does the Commission want it?

The SES will bring some major advantages, such as shorter flights, fewer delays, fewer CO2 emissions, more efficient management, etc. The question here remains why the Commission has been pushing so much for the SES, as these advantages will not directly affect the Union itself. There are 2 main arguments that can be found:

First, since 1990, air travel within Europe has not ceased growing. This has lead to major problems including delays, longer flights, inefficiency and huge divergences in the quality of safety standards. But the principal issue is that the airspace system is managed inefficiently, which wastes time and money. Transport is part of shared competences according to Article 4(2) (g) TFEU. Furthermore, Article 100(2) TFEU gives the Council the power to act with regard to air transportation. The ECJ clarified in the *French Seamen* case that Article 100(2) TFEU (at that time 84(2) EEC Treaty), means 'transport is subject to the general rules of the Treaty', even if the Council has not yet acted.[80] However, air transportation has for a long time been governed exclusively by the Member States.[81] Traditionally, the air navigation services were under the control of government or corporate entities, also referred to as Air Navigation Service Providers (ANSPs), which had a monopoly on the market.[82] This leads to protective behaviour by the Member States, mostly with regard to airline companies, but also had the effect of distorting competition within Europe.[83] Because ANSPs were entirely or partly state-owned, they had advantages compared to private companies.[84] Likewise, because airports were and still are entirely or partially state-owned, competition between airports was nearly impossible.[85] Moreover, pricing was

[80] Case 167/73, *Commission v French Republic*, ECR 1974. Paragraph 31-32
[81] Loewenstein (n 3), p.51
[82] Calleja Crespo and Fenoulhet (n 3), p.3; COM (2008) 389/2 (n 8), p.5; Kenneth Button and G McDougall, 'Institutional and structure changes in air navigation service-providing organizations' (2006) 12 Journal of Air Transport Management 236, p.237
[83] Loewenstein (n 3), p.51
[84] International Civil Aviation Organization, 'Worlwide air transport conference (ATCONF) Sixth meeting: Basic principles of fair competition' (2013) ATConf/6-WP/51 <http://www.icao.int/Meetings/atconf6/Documents/WorkingPapers/ATConf6-wp051_en.pdf> accessed on 22 June 2014; Button and McDougall (n 82), p.244; Dempsey, *European aviation law* (n 50), p.4; van Antwerpen (n 37), p.13
[85] As airports are partly or entirely state owned they are also receiving state aids or are publicly funded. 'The charge level is a key factor, since public funding granted to an airport manager could be used to maintain airport charges at an artificially low level in order to attract traffic and may thus significantly distort competition'.

not entirely transparent.[86] In other words, the Union wants it because the system as it now stands distort competition.

The Union hopes that new business opportunities will be created when the market will be opened. For instance, the Commission wants to open support services such as meteorology and communication, to competition. The core air traffic control services will remain a monopoly but the other services will be separated, enabling new companies to compete.[87] Furthermore, it was one of the only shared competences in which the Union had not yet legislated.

Second, in order to avoid that two out of the four freedoms being hindered, namely free movement of persons and goods, it is imperative to cure this deficit. Above all, when one of the most important concepts in European law, the mutual recognition principle, is only tackled in the Regulation 550/2004 as amended. Article 7 obliges Member States to recognize certificates delivered by any European State. Therefore, the Union felt the urge to redress this problem.

Other minor advantages are the creation of new jobs and the reduction of agreements with non-EU states. First, The Commission estimates that 328,000 jobs will be created in Europe, mostly thanks to SESAR.[88] A second advantage, which was at the center of the discussion for some time, is the reduction of the number of agreements with non-EU states.[89] In 1990, there were 609 BATAs, some of which were very liberal while others were strictly based on Bermuda type agreements.[90] There was a need to change this situation too and SES could drastically improve it.

See : Commission, 'EU guidelines on state aids to airports and airlines' (Communication) Draft (2013) <http://ec.europa.eu/competition/consultations/2013_aviation_guidelines/aviation_guidelines_en.pdf> (accessed 3 February 2014), §40; A. E. du Perron, 'Liability of air traffic control agencies and airport operators in civil law jurisdictions' (1985) 10 Air law 203, p.210

[86] Antolín Sánchez Presedo, 'Report on the Annual Report on EU Competition Policy' (Committee on Economic and Monetary Affairs, document: A7-0143/2013) 2012/2306(INI) <http://www.europarl.europa.eu/document/activities/cont/201304/20130430ATT65503/20130430ATT65503EN.pdf> (accessed 3 July 2014), p.12

[87] European Commission, Press Release IP/13/523 (n 13)

[88] CAPA (n 43)

[89] Loewenstein (n 3), p.52

[90] Commission, 'The Community relations with third countries in aviation matters' (Communication) COM(92) 434 final

Taking into account the above mentioned reasons, one can understand why the Commission decided to launch infringement procedures against 25 out of 27 Member States after the 4 December 2012 deadline for implemented the SES passed.[91] The Commission pursued infringement procedures against the Member States that have made little or no progress towards reform.[92] The informal proceedings have begun and the Commission expects answers to its questions in April 2014, at the latest.[93] The informal proceedings led to letters of formal notice for the members of the FABEC. The Commission is still considering sending other formal letters to the members of the Baltic, Danube, BLUEMED, FAB CE, Southwest and UK-Ireland.[94] In other words, nearly all the Member States are likely to receive a letter of formal notice in the following month.

1.7 The US example

The Union tries to bring its airspace system closer to the American model by introducing the FABs. However, the US example is not an absolute model for the EU because of the federal character of the US and because of the technology used. Yet, it is still interesting to look at the US system in order to realise how inefficient the European system is.

In a strict geographical sense, the surface of Europe and the United States is nearly identical; 11.5 million km² and 10.4 million km² respectively.[95] However, the US has

[91] For more information please refer to: European Commission Mobility and Transport, 'Infringement proceedings in the field of Air transport' <http://ec.europa.eu/transport/media/infringements/proceedings/air_en.htm> accessed 8 May 2014; BBC-News, 'Single European Sky: EU urges action on joint airspace' (12 Octobre 2012) <http://www.bbc.com/news/world-europe-19921805> accessed 2 March 2014; Isabelle Smets, 'Commission to launch infringement procedures' (europolitics, 2012) <http://www.europolitics.info/commission-to-launch-infringement-procedures-artb345916-20.html> accessed 20 December 2013

[92] European Commission, Press Release IP/13/523 (n 13)

[93] Moxon (n 10)

[94] European Commission, 'Single European Sky: Commission urges Germany, Belgium, France, the Netherlands, and Luxembourg to make a decisive move towards a common airspace' (Press Release IP/14/446, 16 April 2014) <http://europa.eu/rapid/press-release_IP-14-446_en.htm> accessed 29 June 2014

[95] John Gulding et all., 'US/ Europe comparison of ATM-related operational performance: An initial harmonized assessment by phase of flight' (2009) Eighth USA/Europe Air Traffic Management Research and Development <http://www.atmseminarus.org/seminarContent/seminar8/papers/p_115_APMM.pdf> accessed on 2 March 2014, p.2; CAPA (n 43)

more airports, with 509 to Europe's 450.[96] The level of air traffic and number of air controllers within Europe and the States are almost identical.[97] Yet, Europe employs many more people in airspace-related jobs.[98] It is worth mentioning that while traffic growth within the European Union has continued to increase significantly, the US has not experienced the same trend.[99] Yet, the US does not face the problems confronting the Union. The reason for this is simple: in the US there is only one air traffic service provider, whereas in Europe there are more than 38.[100] Furthermore, in the US there are 21 en-route centers with a single operating system, while in Europe there are 58 using different operating systems.[101] In order to facilitate the management of the superficies covered by these centers, sectors dealing with a smaller and more specific area were created.[102] In the US the number of sectors contained in an en-route center area varies between 12 and 25.[103] The number of sectors in Europe was around 650 sectors.[104] In both the US and Europe, each sector uses a different radio frequency and is under the supervision of a different controller.[105] Therefore, the cost unit in Europe is much higher than in the US.[106] It might seem surprising that there is a bigger trend in the US to consider sectorization of the airspace as a potential solution to increase efficiency by reducing the controllers' workload.[107] A team of up to four controllers[108] can be assigned to the management of one sector in the US.[109]

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[96] CAPA (n 43)
[97] 'Single European Sky for faster and more convenient air travel' (n 26); CAPA (n 43)
[98] CAPA (n 43)
[99] John Gulding (n 92), p.2
[100] 'Single European Sky for faster and more convenient air travel' (n 26); John Gulding (n 92), p.2; CAPA (n 43)
[101] NASA, 'Center or Air Route Traffic Control Center (ARTCC)' <http://virtualskies.arc.nasa.gov/atm/6.html> accessed 29 June 2014; EC, 'SES 2+ cost and flight efficiency' <http://ec.europa.eu/transport/modes/air/single_european_sky/doc/ses2plus/cost-flight-efficiency.pdf> accessed 2 March 2014, p.1; COM (2008) 389/2 (n 8), p.6
[102] NASA (n 101)
[103] Congress Office of Technology Assessment United States, *Airport and air traffic control system* (Washington, 1982) ch. 3, p.36
[104] COM (2007)101 final (n 1), p.4
[105] Congress Office of Technology Assessment United States (n 103); COM (2007)101 final (n 1) p.4; Hanif D. Sherali and Justin M. Hill, 'Configuration of airspace sectors for balancing air traffic controller workload' (2013) 203 Annals of Operations Research 3, p.3
[106] Calleja Crespo and Fenoulhet (n 3), p.4
[107] John Gulding (n 92), p.1
[108] However, it is more usual to have team up to 3 controllers
[109] U.S department of transportation and Federal Aviation Administration, 'A Plan for the Future: 10-Year Strategy for the Air Traffic Control Workforce 2012 – 2021' (Report) <http://www.faa.gov/air_traffic/publications/controller_staffing/media/cwp_2012.pdf> (accessed 3 July 2014), p.24-25; John Gulding (n 92), p.2; NASA (n 101)

In the US airspace system, the division between states was never a problem as it is in Europe in the sense that each en-route center in the US covers a space of thousands of square miles, which may include part or all of the airspace of several states.[110] Additionally, the position of air traffic controller is regulated by federal law as most controllers are employed by the Federal Aviation Administration (FAA) and pass through a federal civil-service system.[111] Due to this uniformity, the controllers can be sent throughout the US. This would be impossible in Europe because the controllers undergo different training.

For all the reasons above, the US system is said to be more efficient than the European system. Of course, this is not to say that the EU should model itself on the US prototype; there are a crucial difference between the US and the EU, namely that the US is a Federation, which is precisely what the Union sought to avoid. Additionally, two federal agencies, the FAA and the NTSB regulate air travel and investigate accidents.[112] Lastly, the technologies used in Europe for the traffic management were designed in the 1950s, and can be considered as archaic[113], which is not the case in the US.

After having introduced the SES and explained that this system copies the US system, I will go to the core of this dissertation, namely the liability issues.

[110] NASA (n 101)
[111] Craig Freudenrich, 'How Air Traffic Control Works' <http://science.howstuffworks.com/transport/flight/modern/air-traffic-control.htm> accessed 29 June 2014, p.4; Vivian Giang, 'Why Air Traffic Controllers Face A Staffing Crisis Every 25 Years' (Business insider, 22 April 2013) <http://www.businessinsider.com/air-traffic-controllers-will-face-a-staffing-crisis-every-25-years-2013-4> accessed 29 June 2014
[112] 'Aviation Accidents – Overview' (Findlaw) <http://injury.findlaw.com/torts-and-personal-injuries/aviation-accidents-overview.html> accessed 2 March 2014
[113] European Commission, Press Release IP/13/523 (n 13); European Commission, 'Single Sky: Commission Acts to Unblock Congestion in Europe's Airspace' <http://europa.eu/rapid/press-release_IP-13-523_en.htm> accessed 29 June 2014

2. Liabilities in the Single European Sky (SES)

Airspace law is a highly regulated field of law; it derogates from the more general branches of law. Nevertheless, when airspace law does not provide an answer, then the solution must be sought in the other fields of law, such as tort, contract, etc.[114] In our specific case, neither European nor International airspace law, nor national laws are able to solve the problem of liability on their own. However, a combination provides a workable answer to the question of liability.

One of the major loopholes in the system conceived by the European Institution is that there is currently no European legislation that deals specifically with issues of liabilities in the Air Traffic Management (ATM)/ Air Navigation Service (ANS) field. Some answers might be found in international conventions that regulate part of the air law.[115] However, these conventions mostly deal with specific topics and their relevance might be very limited. As a result, the issues of liability are left nearly entirely to the Member States to decide by using national law. Of course, the FAB agreements can be considered a tool to help Member States allocate liabilities and mitigate risks. No clear-cut answers in the case of a crash, however, are to be found. This makes the allocation of liabilities tricky, especially when numerous actors are involved.[116]

The only safeguard provided within Regulation 1070/2009, amending Regulation 550/2004 is Article 8(5): this provision stipulates that 'Where difficulties arise between two or more Member States with regard to a cross-border functional airspace block […] the Member States concerned may jointly bring the matter to the Single Sky Committee for an opinion. […] the Member States shall take that opinion into account

[114] Eurocontrol, 'Impact de la responsabilité juridique dans le domaine du contrôle du trafic aérien' (Projet INO-1-AC-SHIF) (2005) Note EEC No. 06/05, p.4

[115] Marta Simoncini, 'Governing air traffic management in the single European sky: the search for possible solutions to safety issues' (2013) 38 European Law Review 209, p.219

[116] Marta Simoncini, 'Air traffic management in the single European sky: standardisation of safety and liability issues' (2012) EUI MWP; 2012/05 <http://cadmus.eui.eu/bitstream/handle/1814/21759/MWP_2012_05_Simoncini.pdf?sequence=1> accessed 29 June 2014, p. 12; Maurice Catino, 'The Linate Air Disaster: A multilevel model of accident analysis' in Patrick Alvintzi and Hannes Eder (eds), *Crisis management* (p.187-210, Nova Science Publishers, 2010), p.188; Francis Schubert, 'The technical defragmentation of air navigation services' in Pablo Mendes de Leon (ed), *From lowlands to high skies: a multilevel jurisdictional approach towards air law: essays in honour of John Balfour* (Martinus Nijhoff Publishers, 2013), p.63

in order to find a solution.' However, the Article fails to define 'difficulties' and the Single Sky Committee may only deliver an opinion without binding effect.

The absence of relevant provisions does not mean that questions of liability were not examined during the legislative process and development of the FABs. Yet, before 2004, and through state-owned administrations or corporations, most Member States were providing air navigation service over their own airspace and were fully liable for any incidents there. This concept flows directly from the Chicago Convention, which made dealing with liability not seem like a major issue and therefore also unnecessary.

With the introduction of cross-border air navigation services, liability issues became salient. Although the liability has been a recurring issue during the development of the SES proposal, only Recital 15 and Annex I section 7 of the Regulation 1035/2011 requires Member States to enter into agreements with their Air Navigation Service Providers (ANSPs) at the beginning of their operations. These agreements should help to resolve liability questions in cross-border cases. While one of the main aims of the SES is to create closer cooperation between States, Article 8 of Regulation 550/2004 makes clear that the SES does not intend to create an entirely new regime in which only one ANSP will supply its services for the whole FAB.

Yet, it has been decided that the question of how to settle disputes in practice is best to be left to the national level. As a result, no new mechanisms for allocation of liability have been designed. In other words, the Union allows States to apply international and national legal instruments that best fit the specific case. The absence of top-down rules of liability proves that even if a shift from national based management to supranational based management will occur, the approach is still closely linked to international concepts.[117] In every agreement establishing a FAB[118], one of the first articles concerns sovereignty and includes a statement to the effect that the agreement is 'without prejudice to the sovereignty of the Contracting States over their airspace or their rights and obligations under the Chicago Convention and other

[117] Simoncini, 'Governing air traffic management in the single European sky: the search for possible solutions to safety issues'(n 115), p.223
[118] Since the FABs are agreements between States, it probably does not give rights to third parties.

instruments of international law.'[119] Therefore, the principle expressed in Article 1 of the Chicago Convention is not affected by the arrangement between Contracting States. The Member States are protected against inconsistencies that could arise between the provision of EU law and International Conventions; International law still prevails and consequently, the concepts of international law prevail as well.[120] For instance the norm that the state of occurrence is the first to compensate stands. Moreover, the Signatory States are under the duty to provide an ANSP, as encompassed in Article 28 of the Chicago Convention.[121]

Today more systems are becoming automated and this is also true for the ATM, which may alter the customary ways of deciding on liability issues. This potential technological process cannot be ignored in designing a functional system for allocation liability.

In conclusion, the system envisaged is complex with various intricately connected actors involved at different levels.[122] It is impossible, and no one would argue, that the SES could or should prevent the risk of all accidents. Nevertheless, to have a legal instrument dealing specifically with such risks will help resolve the issue of liability more easily and may raise the awareness of various actors about their responsibilities.

There are two major components to the problem: who will compensate the victims and can the State claim money back from the wrongdoer? In order to answer these questions this section is divided as follows: the type of liability will be discussed (section A). The causes of liability will be enumerated and explained (section B). The liability of the main actors involved will be analysed under both the 'old' and new system (section C). Then, the perspective of the victims and the State with regard to compensation and right of recourse will be explored (section D). The liability in the

[119] Article 3 of the NEFAB Agreement. Similar wording; For instance Article 5 of the Baltic FAB
[120] Article 3 TEU: the EU shall contribute "to the strict observance and the development of international law". For more details about the discussion see: Etienne Judicaël, 'Loyalty towards international law as a constitutional principle of EU law?' Jean Monnet Working Paper n°3/11 <http://www.jeanmonnetprogram.org/papers/11/110301.pdf> accessed 29 June 2014
[121] However the wording of Article 28 does not make it mandatory.
[122] Simoncini, EUI MWP; 2012/05 (n 116), p.13

US will be briefly touched upon (section E). Finally, section F will provide intermediate conclusion.

A. Types of liability:

It is critical to decide which type of liability/ liabilities will be applicable in a certain case, as different rules apply to the different types, which results in different consequences.[123] This section will only provide a general understanding of the four types of liability that can be applied in air collision cases, as well as who has to bear the liability. Subsequently, the following section provides more details on the actors involved in air traffic control and how the general picture will change with the implementation of the SES.

i. Criminal

In the context of airspace activities, criminal law can only be applied to certain specific actors. Criminal liability with regard to Air Traffic Service Providers (ATSP) can concern the members of the board of directors, the Air Traffic Controllers and even the directors or employees of the national supervisory authority. Corporate liability can also play a role in certain cases. Nevertheless, for corporate liability to apply specific conditions must be fulfilled.[124] Not all countries have corporate liability and others limit it to specific fields. Therefore, for corporate liability to attach all three conditions must be met: the country must recognize corporate liability, the ATS must fall within the scope of that country's corporation liability, and finally, ATS must be included into the personal scope of the law.[125][126]

The board of directors of the ATSP may be convicted of a crime if it can be proven that the accident was, even partially, the result of a failure of the system, provided that causality and negligence is established. Airport managers and national supervisory authority employees can also be convicted for the same crime. For instance, the airport

[123] More than one type might be applicable to a given case.
[124] Michael Chatzipanagiotis, 'Liability Aspects of Air Traffic Services Provision' (2007) 32 Air & space law 326, p.340
[125] For instance in the UK the *Corporate Manslaughter and Corporate Homicide Act 2007* applies to airport. Ruwantissa Abeyratne, 'Liability for third party damage caused by aircraft some recent developments and issues' (2009) 2 Journal of Transportation Security 91, p.97
[126] Chatzipanagiotis (n 124), p.340; Ronald I C Bartsch, *International Aviation Law: a practical guide* (Ashgate Publisher, 2012), Ch. 8 criminal law

manager as well as the director of Linate airport were found guilty in a 2001 case, referred to as the Linate air disaster.[127][128]

Air traffic controllers and pilots may be charged with (involuntary) manslaughter or (severe) bodily injury.[129][130] It seems that, even though they are aware of the possible criminal proceeding, however, generally there is a lack of knowledge as to the law and proceedings that might be filed.[131] One should bear in mind that criminal law only takes into account the person and not the position he/she has in the society or his/her work.[132] As a logical extension, in most countries, criminal law is not applicable against actions taken by States or public authorities when exercising ATS functions.[133] In other words, controllers cannot protect themselves and escape criminal liability by claiming that they are performing a public job. Even if specific legislation is in place that makes it possible for the State or public authorities to be held criminally liable, that enables the State to be criminally prosecuted, the criminal responsibility of the individuals is not excluded.[134]

There is common ground in the Union with respect to the actors that will likely face criminal liability, but the level of the criminal sanction varies considerably among

[127] CONDANNA: GUALANO Sandro alla pena di anni sei e mesi sei di reclusione; FEDERICO Francesco alla pena di anni sei e mesi sei di reclusione; ZACCHETTI Paolo alla pena di anni otto di reclusione; FUSCO Vincenzo alla pena di anni otto di reclusione
CONDANNA: Altresì gli imputati, in solido, al pagamento delle spese processuali.'
[128] Chatzipanagiotis (n 124), p.341; 'Catastrophe de Linate : 6 à 8 ans de prison' (*le nouvel observateur social*) <http://tempsreel.nouvelobs.com/monde/20040416.OBS7770/catastrophe-de-linate-6-a-8-ans-de-prison.html> accessed 29 June 2014
[129] In France and in Italy, the controllers can be held criminally liable for intentional or involuntary manslaughter. France: Article 121-3(1) of the French Penal Code refers to the notion of intentional fault.
Article 221-6 of the French Penal Code defines the involuntary manslaughter. See: Eurocontrol, Note EEC No. 06/05 (n 114), p.25-26
Italy: the Cagliari accident. See: Ed Pooley et all, 'The 2004 Cagliari accident and afterwards' [2013] Hindsight http://www.skybrary.aero/bookshelf/books/2579.pdf > accessed 29 June 2014
[130] Ruwantissa Abeyratne, *Airport Business law* (AuthorHouse Publisher, 2009), p.71; Chatzipanagiotis (n 124), p.341
[131] Sofia Michaelides-Mateou and Andreas Mateou, *Flying in the face of criminalization the safety implications of prosecuting aviation professionals for accidents* (Ashgate Publisher, 2010), p.153
[132] "Le droit pénal, contrairement au droit civil ou administratif, s'attache aux personnes individuellement, et non à leur « enveloppe », à l'activité qu'elles exercent ou ce qu'elles représentent pour la société". See: Eurocontrol, Note EEC No. 06/05 (n 114), p.2
[133] Ruwantissa Abeyratne, *Air navigation law* (Springer-verlag, 2012), p.38
[134] Chatzipanagiotis (n 124), p.341

Member States because each penal code was based on moral values important to that specific country.[135]

ii. Civil/ tortious[136]

Tortious liability is one of the most common allocation of risk mechanisms. Tort law does not offer specific provisions for airspace matters. The determination of whether a conduct was or was not wrong is done on a case by case basis, applying general principles of tort law.[137] The Rome Convention of 1952 established strict liability of the carrier toward third parties caused by a foreign aircraft on the surface.[138] Article 1(1) of the Rome Convention implies that the act giving rise to the damages was of a delictual/tortious nature.[139] This implication is also to be found in Article 6(1) and 12(1) of the Convention. However, Article 26 restricts its scope of application to civil airplanes only.[140][141] In order to establish that a wrong has been committed, the victim has to show that damages were caused by the aircraft without need of showing that a duty of care owed to him by the defendant was breached, and that the breach led to damages that are neither remote nor unforeseeable.[142]

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[135] "Mais, le mode de gestion reste néanmoins « d'essence publique » dans la majorité des Etats car le caractère public de cette activité est bien réel" See: Eurocontrol, Note EEC No. 06/05 (n 114), p.41

[136] Liability based on tort arises in order to remedy a wrong done to someone or something. Civil liability is mostly associated with a risk that can be either a consequence of, or the conduct itself. Causation plays an important role; there must be a link between the action and the claimed damages. There are two main types of liability; first fault liability, in which the risk is caused by the behaviour and is mostly due to negligence, the breach of a standard of care. Secondly, there is strict liability, in which no fault is necessary; the activity itself can result in damages.
See for instance: Cees van Dam, *European tort law* (2nd ed, Oxford University Press, 2013)

[137] For instance aviation repair stations can be held strictly liable because they can contract insurance but above all they are involved in the safety of the plane.
See: Tom Davis, 'Aviation repair stations and strict liability' (1974) 40 Journal of air law and commerce 413, p.146 et seq; Bartsch (n 126), ch. 6 tort law

[138] Article 23 of the Convention which has been supplemented by a protocol of 1978 on the same topic. However, only 49 countries have signed the Convention. Additionally, some of the 'bigger' player such as the US and Germany did not sign nor ratify it. See: ICAO, 'Convention on damage caused by foreign aircraft to third parties on the surface, signed at Rome on 7 October 1952'
<http://www.icao.int/secretariat/legal/List%20of%20Parties/Rome1952_EN.pdf> accessed 29 June 2014

[139] Peter P. C. Haanappel, *The law and policy of air space and outer space : a comparative approach* (Kluwer Law International, 2003), p.86; Doo Hwan Kim, 'Some considerations of the draft for the convention on an integrated system of international aviation liability' (1988) 53 Journal of air law and commerce 765, p.766; George Leloudas, *Risk and liability in air law* (Informa Publisher, 2009), p.160

[140] Article 26: 'This Convention shall not apply to damage caused by military, customs or police aircraft'

[141] Haanappel (n 139), p. 86

[142] But the liability of the plane owner can be diminish or extinguish according to Article 5 of the Convention

Rules on International carriage of persons and baggage are embodied in the Montreal Convention. The carrier is liable only if the damages occurred 'on board the aircraft or in the course of any of the operations of embarking or disembarking', according to Article 17. But if the carrier can prove that the damages were entirely or partly caused by the person seeking compensation, the carrier might be partly or entirely exonerated.[143] Article 22 limits the amount of compensation in case of delay or for damage, loss or destruction of the baggage. The applicable law, according to Article 29 related to the basis for claims, is national law.[144]

When the Conventions do not apply – if a country has not ratified it or is not a party to it– then national tort law applies unless specific rules have been designed with respect to liability for damages caused by an aircraft on the ground. This latter type of liability is mostly based on strict liability. This is the case in France, UK and Germany.[145] Whether the liability is strict or fault based depends on national law.[146] However, a common feature is that the liability is unlimited.[147] For instance in the UK or the Netherlands, fault-based liability is used to resolve cases involving negligent air traffic controllers. The rationale is that aviation is no longer considered a dangerous activity. In contrast, in Switzerland and France, strict liability applies to controllers, and an even stricter form of liability applies in France.[148] Of course, in a purely internal situation, whereby damages are caused by a national aircraft on national soil, national tort law will apply.[149]

The range of situation where tort law could play a role in airspace related matter is relatively wide.[150] The plaintiffs must show that the defendant owed them a duty of care, that this duty was breached and that their damages were reasonably foreseeable as well as sufficiently connected to the actions of the defendants; in other words they

[143] Article 20 of the Montreal Convention
[144] But, Article 35 limits the time-period to bring a claim to two years
[145] Haanappel (n 139), p.86
[146] Chrystel Erotokritou, 'The Legal Liability of Air Traffic Controllers' (2012) 4 Studentpulse 1 <http://www.studentpulse.com/articles/613/2/the-legal-liability-of-air-traffic-controllers> accessed 29 June 2014, p.2
[147] du Perron (n 85), p.206
[148] Erotokritou (n 146), p.2
[149] Haanappel (n 139), p. 86
[150] Bartsch (n 126), ch.6 tort

must establish a proximate cause link. There is one exception: strict liability for instance liability of manufacturers[151]. According to the general European Directive on product liability Article 1 the liability is absolute.[152] By the simple fact that a product is placed on the market it leads to liability of the manufacturer in case of defects.[153][154] However, the manufacturer has a right of recourse against his contractors, Article 8.[155][156]

Product liability also includes hardware failure.[157] Even if in the contract between the developer and the purchaser there is an exclusion of liability clause, it will not be affective against third parties. Additionally, other types of product liability can also lead to tortious actions, for instance if a table or seat has injured the passenger. Generally, airline companies cover these damages.[158] Consequently, we are not going to elaborate on this section but some references will be made in the part of this dissertation concerning insurance.

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[151] The victims of defective products are not only the users but it can also be a bystander. See: David G. Owen, 'Products Liability: Principles of Justice for the 21st Century' (1990) 11 Pace Law Review 63, p.67
Also, vicarious liability is mostly seen as a type of strict liability of the employer for the wrongful act of his employee. For more information see: Paula Giliker, *Vicarious liability in tort : a comparative perspective* (Cambridge University Press, 2010)

[152] Directive 85/374/ EEC liability for defective products

[153] Even though the Directive named it strict liability, elements of negligence are required in order for the Directive to apply. The plaintiff still needs to prove "damage, defect and causal relationship between the defect and the damage", according to Article 4 of the Directive. Furthermore, Article 7 enumerates cases in which manufacturers will not be liable.

[154] Elmar Giemulla and Heiko van Schyndel, 'Liability in European Law' in Elmar M. Giemulla and Ludwig Weber (eds), *International and EU aviation law: selected issues International and EU Aviation Law : Selected Issues* (p.339-355, Kluwer Law International, 2011), p.349; Simoncini, 'Governing air traffic management in the single European sky: the search for possible solutions to safety issues'(n 115), p.225; Alias, 'E.02.13-ALIAS-D1.3-Framing the Problem - Final Version' (Version 00.00.01) E.02.13 (2013), p.39

[155] Article 8 is without prejudice to national law, as a result the right of recourse will only exist if it is allowed by national law.

[156] David I Levine and Carel J.J.M. Stolker, 'Aviation products liability for manufacturing and design defects : two recent developments', in Doo Hwan Kim and Chia-Jui Cheng (eds), *The utilization of the world's air space and free outer space in the 21st century: proceedings of the International Conference on Air and Space Policy, Law and Industry for the 21st Century held in Seoul from 23-25 June 1997* (Kluwer Law International, 2000), p.189

[157] Alias, 'E.02.13-ALIAS-D1.3-Framing the Problem - Final Version' (Version 00.01.02) E.02.13 (2013), p.58

[158] Justyn Harding et all, *Aviation Insurance* (Institute And Faculty of Actuaries) <http://www.e-bookspdf.org/view/aHR0cDovL3d3dy5hY3R1YXJpZXMub3JnLnVrL3N5c3RlbS9maWxlcy9kb2N1bWVudHMvcGRmL2hhcmRpbmcucGRm/QXZpYXRpb24gSW5zdXJhbmNlIC0gSW5zdGl0dXRlIEFuZCBGYWN1bHR5IE9mIEFjdHVhcmllcw> accessed 29 June 2014, p.22

iii. State

The concept of State liability in air collision cases is not new; it has roots in International law. It is not embodied in any conventions. A State is responsible and liable with regard to certain specific duties related to aviation, according to customary international law.[159][160] When the State provides a service and is not acting as a private person, it will be held liable for the wrongdoing of its agents. In other words, the State will be liable for the negligence of its national Air Navigation Service Provider. Additionally, the State will be required to pay damages that result from the negligence of the air traffic controller(s), if such person(s) are regarded as a civil servant under national provisions.[161] The State will be required to compensate damages occurring as a result of negligence on the side of the air traffic controller(s), if under national provisions that person is regarded as a civil servant.[162] The State may then sue the wrongdoer, but that is done under national law.

Claim for compensation can be filed in two different ways: by relying on public international law or by relying on private international law. Public international law is not used in case of aviation law as the threshold is too hard to meet: one state needs to show that the other state breaches an international duty which results in damages for it or its citizens.[163] Private international law allows private parties to sue a State.[164]

[159] No damages are required: the simple breach of its international obligations will lead to State liability.
See: Christian Dominicé, 'The international responsibility of states for breach of multilateral obligations' (1999) 10 European Journal of International Law 353, p.359-360

[160] Article 1 of the UN document on responsibility of States for Internationally wrongful acts. Retrieved from: United Nations Legislative Series, *Materials on the responsibility of states for internationally wrongful acts* (Book 25, ST/LEG/SER B/25, United Nations, 2012); But also in Niels van Antwerpen, *Cross-border provision of air navigation services with specific reference to Europe: safeguarding transparent lines of responsibility and liability* (Wolters Kluwer Law & Business, 2008), p.111; Loewenstein (n 3), p.28-29; Abeyratne, *Air navigation law* (n 133), p.38

[161] Walter Schwenk and Rüdiger Schwenk, *Aspects of international co-operation in air traffic management* (Martin Nyhoff Publisher, 1998), p.140

[162] du Perron (n 85), p.206

[163] For instance the Chicago Convention, the State is under no obligation to compensate the victims. But States mostly consider ANS as falling under their responsibility.
See: van Antwerpen, *Cross-border provision of air navigation services* (n 160), p.120; Francis Schubert, *La responsabilité des agences du contrôle de la circulation aérienne* (Lenticularis, 1994)

[164] Schwenk and Schwenk (n 161), p.139-140

This is one of the reasons why the agreements establishing the FABs between Member States must be clearly designed. If this is not the case, then the State where the accident occurs will pay for damages arising from the wrongdoing of a foreign entity, without any possibility of subsequent compensation from the wrongdoer. Undoubtedly, the State will try to recover its losses through different means, which may have myriad disastrous consequences.

iv. Contractual liability

Business would be impossible without contract law. Contracts are everywhere and allow enterprises to do business together. This is also true in airspace law.[165] One of the most common contracts in aviation law is the contract of carriage, which is regulated by International and European instruments.

Contractual clauses are mostly used to mitigate tortious liability principles. The use of exclusion clauses, whereby the liability of one of the parties is limited or extinguished, may encourage companies to enter into riskier agreements because they know that they are protected against liability. The best example is when the purchaser agrees on a limitation clause, whereby the software producer is precluded from liability for damages caused by a defect in the software.[166] Limited liability could also encourage manufacturers to invent more complex systems without fearing they will be saddled with liability stemming from their product's failure. While this has benefits, it also means that the purchaser has no recourse, which may discourage consumers who do not want to bear the risk. Article 26 of the Montreal Convention explicitly prohibits this kind of clauses. Furthermore, these clauses do not protect software developers against third parties claims.[167]

With respect to the SES, it will be difficult to ascertain when contract liability will arise since the terms of any contracts remain unsettled. However, it is possible to identify the main situations in which it would be likely for a contract to be established, to which contractual liability could be attached.

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[165] Bartsch (n 126), ch.5 contract law in introduction

[166] Antonio Moccia, *ATACCS'13-Proceedings of the 3rd International Conference on Application and Theory of Automation in Command and Control Systems* (edited by Guillaume Brat, Eduardo Garcia, Antonio Moccia, Philippe Palanque, Alberto Pasquini, Francisco Javier Saez & Marco Winckler, ACM, 2013), p.120

[167] For instance in the UK, a person that was not involved in the accident, but who suffered emotional or nervous trauma by hearing about the involvement of a relative, has a claim on negligence under the Fatal Accidents Act 1976 and the Law Reform (Miscellaneous Provisions) Act 1934. See: Hamid Kazemi, 'Carrier's liability in air transport with particular reference to Iran'(PhD, Leiden University, 2012), p31; Alias, E.02.13 (version 00.01.02) (n 157), p.58

Contractual liability can be imposed on air carriers but only towards its passengers, as embodied in the Warsaw and Montreal Conventions.[168][169] Due to the presumption that a fault was made by the carrier during the carriage, the burden of proof is on the carrier.[170] But contractual liability is not always applicable; even though the Air Navigation Service Providers (ANSPs) charge the airlines for their services, they generally do not have a proper contract with the airline companies. According to some authors, certain crucial elements of contract are missing.[171] The same is true with regards to controllers, whose tasks are provided by law and not contract.[172] This eliminates contractual liability.[173] However, airports may be contractually liable, which will be explained in further detail later.[174]

We might notice a change in the nature of the legal relationship between ANSPs and airline companies resulting from the establishment of the FABs and the allocation of service provision to a private ANSP.[175] It could become more common to enter into contracts with private companies, which if breached, would lead to contractual liability.

[168] The Warsaw Convention contains a set of rules which helps to resolve claim arising out of contractual relationship in the context of international air carriage. See: Hwan Kim, 'Some considerations of the draft for the convention on an integrated system of international aviation liability' (n 139), p.765; Erotokritou (n 146), p.2
[169] The courts of both the place of departure and of arrival have jurisdiction as ruled in Case C-204/08 *Peter Rehder v Air Baltic Corporation*
[170] Hwan Kim (n 139), p.765-766
[171] van Antwerpen (n 37), p.34; du Perron (n 85), p.206
[172] du Perron (n 85), p.205
[173] Erotokritou (n 146), p.2
[174] du Perron (n 85), p.211
[175] Erotokritou (n 146), p.2

B. Causes of accidents leading to liability:

Aviation cases are organisational accidents meaning that the accident is due to multiple causes involving various actors who operate at different levels.[176]

i. Latent defect/ technical failure

The major problem with latent defects is that they may be "dormant" in the system for a long time.[177] The defects may only become evident when other errors occur. In other words, the adverse consequences of latent defects may be dormant for a long time and together with other errors may lead to even more disastrous consequences.[178] Generally, controllers do not create accidents, but more often, they inherit of defective systems (software). The defective system leads to collisions when combined with other mistakes.[179] Latent defects pose a greater threat to safety because they are mostly undetectable before an accident happens and can lead to serious incidents.[180] But above all, the main problem is that latent defects are remote from the control interface, which makes it hard to determine the cause(s) of the problem(s) and therefore who should be held liable.[181]

Latent defects may be the result of an error by the designer, maintenance personnel, constructors, managers, the Traffic Collision Avoidance System (TCAS) as a technology and Air Traffic Management system (ATM) as encompassing all the components of the ATM system.[182] For instance, the Concorde case, where a piece of metal, which fell from the aircraft onto the runway, cutting the tire and leading to the fire of the Concorde. This was a case of bad design which led to catastrophic results.

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[176] James Reason, 'Achieving a safe culture: theory and practice' (1998) 12 Work and Stress 293, p.295
[177] James Reason, 'Beyond the organisational accident: the need for "error wisdom" on the frontline' (2004) 13 Quality & Safety in Health Care 28, p.29
[178] James Reason, *Human error* (Cambridge University Press, 1990), p.173
[179] Ibid, p.173; James Reason, 'Human error: models and management' (2000) 320 British Medical Journal 768
[180] Robert B. Whittingham, *The blame machine why human error causes accidents* (Elsevier Butterworth-Heinemann, 2004), p. 30; Reason, 'Beyond the organisational accident: the need for "error wisdom" on the frontline' (n 177), p.29
[181] Reason, *Human error* (n 178), p.173
[182] Ibid, p.173

For the purpose of my research, I will mostly focus on the latent defect in the ATM and TCAS softwares, because this may have repercussion on the liability in cross-border cases. Additionally, this software is part of the multi-layer technology developed to maximize the reduction of the risk of mid-air collisions.[183] Nevertheless, the designer of the systems cannot possibly foresee all accidental scenarios that might occur.[184]

Air Traffic Management (ATM) system is often viewed as improving safety.[185] Yet, what happens when the system does not function properly and leads to disasters such as collisions? It is acknowledged that the system has the potential to reduce the likelihood of crashes.[186] The reduction of risks through a new system does not necessarily preclude the introduction of new sources of safety risks by that system. The ATM software introduced is based on an automation of the existing system. This will reduce the workload of the controllers[187] but its ability to increase safety depends on the ability of the system to override human error when needed. The new system may reduce human errors but it will also make it more difficult to determine what went wrong, which is critical for allocating liability. Who is liable and to what extent will also be difficult to determine. There are myriad of reasons why the ATM system may fail.[188] For instance, in both the *Linate* and the *Überlingen* cases, the investigation highlighted a problem that was caused by a latent defect in the system in conjunction with human error.[189]

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[183] James K. Kuchar and Ann C. Drumm, 'The Traffic Alert and Collision Avoidance System' (2007) 16 Lincoln Laboratory Journal 277, p.277

[184] Reason, 'Beyond the organisational accident: the need for "error wisdom" on the frontline' (n 177), p.2

[185] ATM system was created to guarantee flight safety. See: Andrew Cook, *European air traffic management : principles, practice, and research* (Ashgate Publisher, 2007), p.1; Jeffrey J. Joyce, 'Software safety for air traffic management systems' (Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, 2002) <http://dspace.mit.edu/bitstream/handle/1721.1/35848/16-358JSpring-2003/NR/rdonlyres/Aeronautics-and-Astronautics/16-358JSystem-SafetySpring2003/3A4E41EE-1935-4631-A018-A8DC84CE6E44/0/jeffjoyce.pdf> accessed 3 July 2014, p.1

[186] Joyce (n 185), p.1

[187] Alias, E.02.13 (version 00.01.02) (n 157), p.57; Joyce (n 185), p.1

[188] Joyce (n 185), p.9

[189] Eurocontrol, 'ES2 - Experience Sharing Enhanced SMS'<http://www.eurocontrol.int/services/es2-experience-sharing-enhanced-sms> accessed 29 June 2014; Agenzia Nazionale per la sicurezza del volo, 'Accident involved aircraft Boeing MD-87, registration SE-DMA and Cessna 525-A, registration D-IEVX Milano Linate Airport, 8 October 2001' (2004) N. A/1/04 <http://www.skybrary.aero/bookshelf/books/480.pdf> (accessed 5 June 2014); Bundesstelle für Flugunfalluntersuchung, 'Investigation Report' (2004) AX001-1-2/02

Defects in the TCAS can be caused by the processors insufficient capacity to compute updates or design defects.[190] TCAS can also induce minor errors and new hazards.[191] Additionally, defects can occur in the Remotely Piloted Aircraft Systems (RPAS), if, for instance, the software that calculates the avoidance manoeuvres does not function properly due to inadequate testing. In these cases, the airline companies or the ATM providers would have a product liability claim against the constructor or designer, unless there is an exclusion clause in the contract.[192] Product liability claims are only acceptable when it can be proven that the technology proposed by the manufacturer has failed to function properly, which led to the crash.[193] This has been illustrated in the judgment of the Spanish Court of First Instance N. 34 of Barcelona[194], whereby the Court decided that the alleged defect could not be proven and the technology worked properly.[195] In order to apply product liability rules, the technology provided by the manufacturer needs to be considered as a product in the first place, otherwise, a different type of liability will apply.[196][197] Furthermore, a claim against the software producer will fail if the contract contains an exclusion clause which extinguishes the designer liability.[198]

Air Traffic Control Systems are less likely to be subjected to bugs because the profile of these special-purpose software systems are better defined than those for

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<http://www.icao.int/safety/airnavigation/AIG/Documents/Safety%20Recommendations%20to%20ICAO/Final%20Reports/02001351_final_report_01.pdf>(accessed 22 June 2014)

[190] Moccia (n 166), p.119

[191] José Luis Garcia-Chico, 'A human factors analysis of operational errors in ATC: the TCAS case study' (Degree of Master of Science, The Faculty of the Graduate Program in Human Factors and Ergonomics of San José State University, 2006)
<http://www.hf.faa.gov/hfportalnew/Search/DOCs/JLGChico-Thesis-Operational%20Errors%20in%20ATC-TCAS_Final_no%20appendix_.pdf> accessed 29 June 2014, p.1

[192] Moccia (n 166), p.120

[193] Isabella Henrietta Philepine Diederiks-Verschoor, *An introduction to air law* (Aspen Publishers, 2006), p.148

[194] The case was first filed in the US, where the claim was dismissed on the ground of *forum non conveniens, Faat* v. *Honeywell Int'l*, (2005) WL 2475701 (D.N.J. Oct. 5, 2005)

[195] Alias, E.02.13 (version 00.01.02) (n 157), p.39

[196] If the TCAS is regarded as a service then the liability basis will be fault and no more strict liability. However, after the decision of the CJEU in the *Usedsoft* case (C-128/11), we can deduce that TCAS failure will fall under product liability.

[197] Moccia (n 166), p.120

[198] R. Bender, *Space transport liability: national and international aspects* (Martinus Nijhoff Publisher, 1995), p.143; Moccia (n 166), p.120

general use software.[199] Although the risk cannot be eliminated entirely, the reduced risk of software bugs is critical because of the disastrous consequences that a failure in these software programs could create.

According to the Swiss cheese theory, accidents are caused by a multitude of failures.[200] Under the Swiss cheese theory, the simultaneous alignment of failures, at different levels of the system, can lead to disastrous consequences.[201] Human errors, both active and latent, are only two of the possible failures.[202]

[199] Stephen H. Kan, *Metrics and models in software quality engineering* (2nd ed, Addison-Wesley Professional, 2002), p.87; Charles Perrow, *Normal accidents: living with high-risk technologies* (Princeton University Press E-Book, 2011), p.133

[200] Eurocontrol, 'Revising the "swiss cheese" model of accidents' (Eurocontrol Experimental Centre) (2006) EEC Note No. 13/06 <http://i3pod.com/wp-content/uploads/2011/04/Revisiting-the-Swiss-Cheese-Modek-EEC-note-2006-13.pdf> (accessed 13 April 2014)

[201] Reason, 'Achieving a safe culture: theory and practice' (n 176), p.295-6; Reason, 'Beyond the organisational accident: the need for "error wisdom" on the frontline' (n 177), p.29

[202] Garcia-Chico (n 191), p.35

ii. Human error

Many authors around the world, particularly in the US, argue that human error causes most accidents.[203] Others have demonstrated that human error cannot provide the whole picture. It is true that looking at the causation chain and finding the root cause of the accident is very complicated, if not impossible.[204] It might seem simple to say that the error was caused by a person without considering the complex system with which he/she works. But it is also in human nature to find causes to problems even when there are none, and to try to fit all the facts together.[205] In Hollnagel's view, accidents happen as a result of the convergence of several factors, but he does not consider any one of these the main cause. In the complex and nearly automatic system, humans are usually seen as the most vulnerable component, but at the same time, they are the ultimate safety barrier to prevent collisions, as they are more flexible and can make adjustments which will stop or mitigate the failure which computers cannot do.[206]

The term human error encompasses any situation where part or all of an incident or collision is caused by human action.[207] Therefore, human errors can be caused by various actions, leading to liability of various actors. According to Reason's definition a human error is: 'a generic term to encompass all those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome, and when these failures cannot be attributed to the intervention of some chance agency.'[208] In the past few decades, the automation of the system has increased.[209] But even with all the innovations, humans still order traffic flow, even if computerization has

[203] Robert L. Helmreich, 'On error management: lessons from aviation' (2000) 320 British Medical Journal 781, p.781; Whittingham (n 180); Eduardo Salas and Dan Maurino (eds), *Human factors in aviation* (2nd ed, Academic Press Publisher, 2010), p.337; Barnes W. McCormick, 'Aviation accident reconstruction and litigation: a gudie for the attorney and expert', in Barnes W. McCormick and Myron P. Papadakis (eds), *Aircraft Accident Reconstruction & Litigation* (4th ed, Lawyers & Judges Publishing Company, Inc, 2011)
[204] Garcia-Chico (n 191), p.5
[205] Erik Hollnagel, 'The phenotype of erroneous actions' (1993) 39 International Journal of Man Machine Studies 1, p.25
[206] Garcia-Chico (n 191), p.5; Alias, E.02.13 (version 00.01.02) (n 157), p.20
[207] Hollnagel, 'The phenotype of erroneous actions' (n 203); Whittingham (n 180), p.3
[208] Reason, *Human error* (n 178), p.9
[209] Ibid, p.174

allowed them to do many tasks at the same time.[210] As a result, between humans and their 'initial' activities more and more layers of systems have been integrated[211] and the tasks have increased in complexity.[212] Today, their task is primarily to monitor the system.[213] The efficiency of a system depends entirely on its actors.[214]

Human error can occur in various ways. For example, when the person in charge of the maintenance did an insufficient or nonexistent maintenance, this leads to a human error. In such a situation, the maintenance operator is the first person held liable because he/she is under a duty of care. But one can also hold the maintenance manager responsible for a failure to realise that the problem could arise. Additionally, in some legal systems, the maintenance company can be held vicariously liable. Organisational responsibility of the company may also be available.[215]

According to the latent factors theory, accidents can only happen if latent conditions are present.[216] In other words, in a perfect system, human error will not have an important impact and will not be able to cause accidents. However, since a perfect system does not exist, there must be a failure in the system. This failure in the system combined with a human error will render accidents possible and mostly inevitable.[217]

Nevertheless, this principle cannot always be held true. For instance in the Nantes accident, there were two major causes of the collision: first, military air controllers, who were not familiar with the equipment, were providing air control under the

[210] van Antwerpen (n 37), p.5
[211] Reason, 'Achieving a safe culture: theory and practice'(n 176), p.296
[212] For instance see: Perrow (n 199) or Erik Hollnagel and David D. Woods, *Joint cognitive systems: foundations of cognitive systems engineering* (CRC Press, 2005), p.3 and *seq*
[213] Reason, *Human error* (n 178), p.174; Alias, E.02.13 (version 00.01.02) (n 157), p.20
[214] Robert W. Proctor and Trisha Van Zandt, *Human factors in simple and complex systems* (2nd ed, CRC Press, 2008), p.9
[215] Moccia (n 166), p.119, figure 5
[216] Helmreich (n 203), p.783
[217] Catino
(n 116), p.189

Clément Marot system.[218] Second, the controller mistakenly instructed the Spantax airliner to climb to level 290 twenty-two minutes before the accident.[219] Therefore, both the Spantax aircraft and the Iberia flight, which were supposed to fly over Nantes at the same time (12h52), were at the same altitude but on different traffic lanes.[220]

The control center of Brest (Menhir) communicated to the control center of Mont-de-Marsan (Marina), which was in communication with the Spantax, to request the Spantax crew to delay their arrival over Nantes, because no other flight level was available.[221][222] Due to the lack of knowledge about the international civil aviation conventions, the controller forgot to confirm the order given to the Spantax. The confirmation of the order requesting the pilot to delay his arrival by eight minutes was given only nine minutes before the aircraft was meant to arrive in the Nantes sector. The pilot should have immediately requested to fly racetrack,[223] however, he did not because he thought that by reducing his speed he would be able to lose the eight minutes. The traffic controller instructed the pilot to change radio frequency, as he was at the boundaries between the two control centers resulting in bad communication with the Marina control center. The pilot understood the order as being immediately effective and changed frequencies. The pilot reiterated his demand to fly racetrack but received no answer. The pilot was facing a dilemma; either wait for permission or be

[218] The Clément Marot system is a contingency system established in order to ensure traffic control over French airspace when civilian air controllers are striking. The task of civilian traffic controller is taking over by military air controllers for the duration of the strike.

[219] "En raison de la grève des service de contrôle de l'aviation civile, le dispositif de remplacement, dit Clément Marot, prévu par l'instruction RAC-7, a été mis en place le 24 février 1973, à 11 h TU, par NOTAM A 96 du même jour." See: BEA, 'Rapport final de la Commission d'Enquête sur la collision du DC. 9 EC-BII de la Iberia et du Coronado EC-BJC de la compagnie Spantax [Région de Nantes-5 mars 1973]' (reproduction of report of 1975) (2002) <http://www.bea.aero/docspa/1973/ec-i730305/pdf/ec-i730305.pdf> (accessed 22 April 2014), p.6 ; French Secretariat of State for Transport, 'Iberia DC 9 EC-BII, Spantax Coronado EC-BJC, report on the collision in the Nantes area, France, on March 1973 : reprint of the report published by the French Secretariat of State for Transport' (1975) Aircraft Accident Report 7/75 <http://www.aaib.gov.uk/cms_resources.cfm?file=/7-1975%20EC-BII%20and%20EC-BJC.pdf> (accessed 3 July 2014), p.9

[220] Aviation Safety Network, 'Accidents' <http://aviation-safety.net/database/record.php?id=19730305-1&lang=fr> accessed 2 March 2014

[221] Normally, when two planes are due to arrive at the same time over an identical point, the procedure requires the controllers to request one of the flight to change altitude. Here however, this possibility was apparently unavailable, that is why the controllers requested the Spantax to retard its arrival by 8 minutes. The new arrival time over Nantes beacon should have been 13H00.

[222] Aircraft Accident Report 7/75 (n 219), p.9

[223] When a plane flights racetrack that means it leaves its original traffic lane to go on the side and comes back in its original lane when it has lost the amount of time required

in defiance of the order he received, namely to delay his arrival over Nantes. So, the pilot decided to turn starboard with poor visibility and by doing so, he crashed into the Iberia flight arriving behind it.[224] Notably, none of the control centers received Spantax's flight plan beforehand[225] so they did not expect the Spantax in their sectors.[226]

In this case, no system defects were spotted in the accident report, only a human error. The controller's responsibility in the collision is undeniable, while the pilot's responsibility/role is unclear.[227] Moreover, the French Government, perhaps a less obvious actor, was one of the main actors at fault; the French Government at that time refused to participate in fruitful negotiations that had begun in March 1973.[228]

It seems that the Nantes accident is more of an exception, with the latent factor theory being generally the rule in cases of air collision. Therefore, it seems logical that the manager in charge of flight security would be held personally liable as a result of an accident. Furthermore, depending on national law, the company providing the service can be held vicariously liable.[229] To reduce the risk of human error, a new ATM system was introduced with the primary purpose of diminishing the controller workload.[230] However, the automation of the ATM system creates new tasks for the controllers, such as entering flight data and clearance. This poses the main problem: the system may work perfectly but if the controller fails to update the clearance or the flight data, it will cause false alarms. For instance, if the controller fails to change the altitude of an aircraft in the system and another aircraft is at the same altitude, then the system will send an alert to avoid collision when in fact there are no risks of such a

[224] Aviation Safety Network (n 220)
[225] Aircraft Accident Report 7/75 (n 219), p.8; BEA (n 219), p.6
[226] BEA (n 219), p.6
[227] BBC-News, '1973: Mid-air collision kills 68'
<http://news.bbc.co.uk/onthisday/hi/dates/stories/march/5/newsid_4202000/4202039.stm> accessed 2 March 2014
[228] A French administrative court found that the French State was responsible for 85% of the damages. The collision would have been certainly avoided if the controllers were not on strike. See de case from *Conseil d'Etat 1982*.
[229] Moccia (n 166), p.119, figure 5
[230] Joyce (n 185), p.2; Frank Redmill and Tom Anderson, *Improvements in system safety proceeding of the sixteenth Safety-Critical Systems Symposium, Bristol, UK, 5-7 February 2008* (Safety-Critical Systems Club, Springer, 2008), p.155-157

collision. If the pilots follow the instructions and change altitude again, his plane may end up on the same route as another aircraft. Such scenario fails to predict a real conflict.[231] Furthermore, action taken by the system will be less comprehensible to the controller as he will only be supervising it but no longer dealing with the problem itself, unless a failure occurs.[232]

One should bear in mind that the defect in the system could be present for several years but not until the combination of the defect with human error will disaster occur.[233] The *Überlingen mid-air collision* case is a good example of this. On 1 July 2002 at 23:35 a mid-air collision occurred between Bashkirian Airlines Flight 2937 and DHL Flight 611 over the towns of Überlingen and Owingen in Southern Germany. The fact that both planes were flying at the same level, namely 36,000 feet, caused the accident. Flight 2937 was a charter flight from Moscow to Barcelona, carrying 60 passengers and nine Russian crew members. The other plane was a cargo aircraft, with only the two pilots present, going from Bergamo to Brussels. All 71 people aboard the two aircraft died.

Peter Nielsen was on two workstations at the time of the accident. This was against air control regulations, but was nevertheless, current practice in the Swiss company. Due to some maintenance on the main radar requiring the controller to work with a slower system, in addition to his own negligence, he failed to notice that the two aircrafts were on the same route at the same level and therefore, failed to keep them at a safe distance from one another. Furthermore, each plane had an on-board system called Traffic Collision Avoidance System (TCAS), and this system is linked to the air traffic control post in Zurich, where Skyguide was established. However, the system failed to alert Nielsen and only alerted the two pilots less than a minute before the crash. When Nielsen realised that the danger of having an accident was present, he requested the Russian plane to go down by a thousand feet. At the same time, however, the TCAS of both aircraft gave orders to avoid an accident; instructing the DHL plane to descend and the Russian plane to climb. Under Russian regulation, in

[231] Joyce (n 185), p.3
[232] Alias, E.02.13 (version 00.01.02) (n 157), p.20
[233] Catino (n 116), p.189; Kan (n 199), p.87

case of conflicting instructions, the final decision is left to the pilot. In this case, the pilot listened to Nielsen's instructions and descended. Therefore both planes descended. Nielsen did not receive a notification of the alerts issued by the TCAS. The last crucial mistake he made was to tell the Russian crew that the DHL plane was on its right while in fact it was on his left. As a result, the Russian crew saw the DHL plane a few seconds before the collision but could not climb quickly enough to avoid it.

In this incident, the collision occurred due to both a system failure, the maintenance of the radar and the TCAS failure to alert Nielsen on time, but also due to a human mistake, namely, Nielsen failing to realise that two aircrafts were on the same route at the same level.[234]

Human errors can also be caused by pilots, crews and mechanics.[235] It might be complicated to determine who was actually at fault. In theory every person has a specific role, however in practice people assist one another in order to increase efficiency.[236] Then the question remains: is the person who helped make the decision, even though it was not part of his/her tasks, also liable? If a controller delegates part of his work to a colleague because he or she has too much work to do, or is taking a break as in the *Überlingen* case, does that mean that person is free from liability? As a general rule, liability is not transferrable but in certain specific cases, the person may be absolved from his/her responsibilities.

The use of more complex systems and the risk of latent conditions in that system require the judge to look at the broad picture in order to decide a case, using the systemic approach theory to human error. In other words, a complex system cannot be

[234] P. Nikolai Ehlers, 'Case Note: Lake Constance Mid-Air Collision: Bashkirian Airlines v. Federal Republic of Germany'(2007) 32 Air & Space law 75
[235] Reason, *Human error* (n 178), p.173
[236] It is also referred to as the problem of many hands. See for instance: Rosja Mastop, 'Characterising Responsibility in Organisational Structures: The Problem of Many Hands', in Guido Governatori and Giovanni Sartor (eds), *Deontic Logic in computer science* (p.274-287, Springer Berlin Heidelberg, 2010)

studied separately from human error because the interaction between the human users and the system itself forms the very essence of the systems.[237]

Finally, it should be remembered that in these complex and nearly automatic systems, the human factor is usually the most vulnerable component, but at the same time, is also the ultimate safety barrier against collisions.[238] Lastly, human errors can occur despite the competence of the operator.[239]

In the current stage of the SES Regulations, the problem of latent-human error has not been discussed. The absence of clear (general) liability rules combined with the omission of addressing the human-machine relationship, especially for the ATM part, will complicate the picture further.

[237] M Ottimo, 'Complex systems' (2003) 49 AIChE Journal 292, p.293
[238] Garcia-Chico (n 191), p.5
[239] Graham D. Edkins, 'A review of the benefits of aviation human factors training' (2002) 2 Human Factors and Aerospace Safety 201, p.118

C. Actors involved in traffic control and their liabilities

This section will help to answer the main question by looking at the different actors involved and assessing the status of liability without the SES and whether the SES will change the liability framework.

i. States

Under customary international law, a State is responsible and liable for any breach of its international obligations.[240][241] For instance, Article 28 of the Chicago Convention imposes an obligation on the contracting States, to provide air navigation services.[242] Article 31 of the Convention requires States to certify the airworthiness of aircrafts flying under its flag. Article 32 obliges the States to control the licenses for personnel on board aircrafts and to have insurance for potential damage to the aircraft.[243] In as much, if a State does not comply with these provisions and a collision occurs, it will be liable.

Another important principle of international law is that the State of occurrence is under the duty to compensate the victims and subsequently, it can seek recourse against the wrongdoer(s). A similar recommendation was made to the Commission by Eurocontrol in 2008: the state of occurrence is ultimately liable for accidents occurring within its airspace even after the introduction of the FABs system.[244]

The FAB system is based on a close cooperation among States. In order to meet this requirement, Member States have to enter into agreements to establish the different FABs. The FABs could have changed the previous liability picture by

[240] Article 1 of the UN document on responsibility of States for Internationally wrongful acts.
Retrieved from: United Nations Legislative Series (n 160); But also in van Antwerpen, *Cross-border provision of air navigation services* (n 160), p.111; Loewenstein (n 3), p.28-29; Abeyratne, *Air navigation law* (n 133), p.38

[241] The Convention establishes rights and duties between States, but it does not create rights for individuals. See: Loewenstein (n 3), p.28-29

[242] van Antwerpen (n 37), p. 24; Erotokritou (n 146), p.1

[243] These provisions have been transposed into Regulation 550/2004, under Articles 6 and 7. In order for Article 7 to be fulfilled the requirements of Regulation 2096/2005 must be met, as mentioned in Article 3 of Regulation 2096/2005.

[244] Recommendation 17 in Eurocontrol, FAB Evaluation (n 31), p.181

introducing a new approach since the system is new. Therefore, the question is; would the State still be primarily liable?

We can take a look at the Maastricht Upper Area Control Center (MUAC) and to which extent the State is liable. One may even regard the MUAC as the first FAB established in Europe. Eurocontrol is in charge of the MUAC, therefore it is partially liable for anything happening in the area covered by the MUAC, which consists of a part of Germany, Belgium and The Netherlands, as provided in the amended version of 1981, which amended the 1960 Convention signed in Brussels.[245] Eurocontrol can face both contractual and delictual liability. Article 28.1 of the amended version[246] stipulates that the contractual liability derived and is governed by the law applicable to the contract. However, ATM services never give rise to contractual liability but only to delictual liability.[247] Therefore, when Eurocontrol is operating as an ANSP then only Article 28.2 is applicable. Paragraph 2 stipulates that Eurocontrol is liable for damage resulting from its negligence, as it has legal personality, and that state immunity does not cover Eurocontrol.

Here comes the problem: under the Belgian version of the agreement, which confers power to Eurocontrol, Article 1(2) clearly states that the delegation does not extinguish the rights and duties of the Belgian State under international agreements.[248] One may ask who is liable and who will pay first, to which an answer can be found in Article 11 of the same agreement. Although paragraph 1 states that each party is liable for the damage imputable to it, the second paragraph clearly states that, except for the cases falling under paragraph 1, Eurocontrol has to guarantee the contracting parties

[245] Alias, E.02.13(version 00.00.01) (n 154), p.64
[246] Previously Article 25.1 of the Eurocontrol Convention
[247] Schwenk and Schwenk (n 161), p.148
[248] 'Article 1.
1. […]
2. Chacune des Parties contractantes nationales, […], conserve ses compétences et obligations en matière de législation aéronautique, de réglementations, d'organisation de l'espace aérien et de relations avec des Organisations internationales comme l'OACI, ainsi qu'avec les usagers de l'espace aérien ou toute autre tierce partie.'

Retrieved from: Accord relatif à la fourniture et à l'exploitation d'installations et des services de la circulation aérienne par EUROCONTROL au centre de contrôle régional de Maastricht, signé à Bruxelles le 25 novembre 1986. Affaires Etrangères, Commerce extérieur et coopération au développement. Publication n° 14-03-1990, p. 4706, Entrée en vigueur le 01-01-1990.

against actions that might be brought for damages. Here again, the picture is blurry; on the one hand we know that Eurocontrol will have to pay for damages, but on the other hand, the agreement does not extinguish the duties of the Contracting States under international law. Furthermore, the problem will be even harder to solve as the Convention neither stipulates which law will be applicable, nor which forum will have jurisdiction.[249] Nevertheless, Eurocontrol has recourse against a State if the damages are also due to the negligence of that State, as specified in Article 28.2 of the consolidated version of the Convention[250] and Article 11(3) of the Belgian Agreement.[251]

The situations among Member States varies considerably; for instance in Germany only the State can be sued, whereas in other Member States, the air traffic provider can be held liable and State immunity can be waived. An example of a Member State waiving its immunity is the Tenerife collision of 1977, when Spain directly compensated the victims.[252] The State is also accountable if damages result from a failure by the national air navigation service provider. However, the State can then sue the provider or sanction internally.[253] In the UK, the ANS has been privatized so liability does not fall on the State, but rather, on the provider, which is considered a normal company by the courts. But, even under the UK approach, the State is not

[249] Alias, E.02.13(version 00.00.01) (n 154), p. 64

[250] Old Article 25.2 of the Convention of 1981

[251] 'Article 11

1. Chaque Partie contractante nationale est responsable de tout dommage survenu par suite ou à l'occasion des services qu'elle fournit à l'Organisation conformément aux dispositions de l'Article 2, paragraphes 2 et 3 du présent Accord dans la mesure où ce dommage lui est imputable.
2. Sauf dans le cas prévu au paragraphe 1 du présent Article, l'Organisation garantit les Parties contractantes nationales contre l'action qui résulte d'un dommage survenu par suite ou à l'occasion des services fournis conformément aux dispositions du paragraphe 1 de l'Article 1 et du paragraphe 1 de l'Article 2 du présent Accord.
3. La responsabilité de l'Organisation peut être mise en cause, conformément au paragraphe 2 de l'Article 25 de la Convention amendée. Cependant, pour les cas visés au paragraphe 1 du présent Article, l'Organisation a un droit de recours contre les Parties contractantes nationales pour toute indemnisation due à ce titre.
4. […]'

[252] Erotokritou (n 146), p.1

[253] This is called the state primary responsibility doctrine.
See: Francis Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky', in Daniel Calleja Crespo and Pablo Mendes de Leon (eds), *Achieving the single European sky: goals and challenges* (p.51-64, Kluwer Law International, 2011), p.53

totally freed from its liability because it may still have to pay for damages for which it is directly at fault.[254]

Even if a State has entered into a delegation agreement, in accordance with Annex 11 of the Chicago Convention, it will still be liable if the damages occurred on its territory. As stipulated in that Annex; 'a State may delegate to another State the responsibility for establishing and providing air traffic services.'[255] The State might then be able to claim compensation, if the agreement so allows.[256]

Public authorities still control Air Traffic Management.[257] Even when the ATM is autonomous, the State will be held responsible -following the principle of international law- as the provider is under the regulatory control of the State.[258] If public authorities are held liable, this means the State can be held liable, even though the State can then file another claim or take internal sanctions against the person(s) whose conduct led to the accident. The problem arising here is that the lawful interactions between the persons acting under state authority, following standard settings, can result in damages.[259]

A state may escape liability by claiming sovereign immunity but only in cases involving a private party against that State.[260] The courts are very reluctant to hear a case involving another State because of state equality embodied in the principle, '*par in parem non habet imperium.*'[261] Additionally, actions of public bodies are mostly covered by state immunity. If the State does not voluntarily waive its immunity, there

[254] This is called the service provider exclusive liability doctrine. It will be morally unacceptable if the UK would not help NATS to compensate the victim due to the very nature of the ANSP functions. Furthermore, NATS remains under the supervision of the UK, which is still responsible for certification and designation of service providers. See: Alias, E.02.13(version 00.00.01) (n 154), p. 64

[255] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.55; Schwenk and Schwenk (n 161), p.148

[256] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.55

[257] Simoncini, EUI MWP; 2012/05 (n 116), p.13

[258] Abeyratne, *Air navigation law* (n 133), p.21

[259] Simoncini, EUI MWP; 2012/05 (n 116), p.13

[260] Christian Tomuschat, 'The International Law of State Immunity and Its Development by National Institutions' (2011) 44 Vanderbilt journal of transnational law 1105, p.1118

[261] Sévrine Knuchel, 'State Immunity and the Promise of *Jus Cogens*', (2011) 9 Northwestern University Journal of International Human Rights 149, p.150; Lazar Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (2013) 38 Air & Space law 33, p.35

is little chance that the case will be heard, unless the nation State of the victims becomes involved.[262] However, eight States which have adhered to the 1972 European Convention on State Immunity, have agreed to waive their immunity *de jure*.[263] But even if the State has not signed the Convention, States usually renounce to their immunity mostly because of moral considerations. For instance in the explanatory note of the NEFAB, it is clearly stated that the agreement will prevent states from invoking sovereign immunity. Moreover, the victims can ask his/her national State to sue the liable State on his/her behalf, making the case a public international case.[264] Consequently, it is critical that the agreement establishing the FABs is drafted to cover possible claims that can arise as the result of an accident and prohibit States from relying on state immunity arguments. But one should certainly not stress this argument too much, as generally States do not rely on their state immunity, at least in Europe.

Generally, immunity is not an issue; the State where the accident occurred must compensate the victims, and subsequently can seek recoupment from the wrongdoer. A problem might arise if that State refuses to pay, while a foreign victim files a claim in their home country: the State of occurrence will be able to claim State immunity. There are no cases in the Union where a Member State used its immunity toward another Member State. This can partly be explained by the principle of mutual recognition and cooperation. The only problem that might arise is with accidents that occur in non-EU countries, but it is unclear if the State will claim State immunity.

One may wonder how a case will be dealt with in practice as, it is clear from the preamble of the SES Regulation 549/2004 and 551/2004 and Articles on sovereignty in both agreements, that the SES will not prejudice the concept embodied in Article 1 of the Chicago Convention, which reaffirms the sovereignty of states over their airspace. Although Paragraph 2.1.1 of Annex 11 of the Convention allows for delegation of air navigation service by agreement between States, what about block of

[262] Stephen Wilson Brice, 'Forum shopping in international air accident litigation : disturbing the plaintiff's choice of an American forum' (1984) 7 Boston College international and comparative law review 31, p. 37; Lazar Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (EU Aerospace Law, Leiden University, 2012) <http://media.leidenuniv.nl/legacy/lazar-eu-aerospace-law-paper.pdf> accessed 29 June 2014, p.4

[263] Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (n 262), p.4

[264] Schwenk and Schwenk (n 161), p.140

States? First, one should remember the Union agreed to fully comply with the ICAO provisions. Second, ICAO is favorable to block of States, or at least does not prohibit them.[265] Nothing requires States to provide ANS through state-owned entities. The only obligation imposed on states is to take care of air navigation services.[266] This is in accordance with Article 22 of the Chicago Convention which is phrased as follows;

> 'Each contracting State agrees to adopt all practicable measures, […], to facilitate and expedite navigation by aircraft between the territories of contracting States, and to prevent unnecessary delays to aircraft, crews, passengers and cargo, […]'

One may conclude that inter-state cooperation is already required and embodied in the Chicago Convention. Therefore one may ask what will SES change? Why do we need it?

[265] Article 1 of the Chicago Convention only mentioned that; 'The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory'.
[266] Article 28 of the Chicago Convention

1. State liability within the Treaties establishing the FAB.

Confusion exists regarding the nature and scope of service provision: most of the technical and operational responsibilities flowing from the exercise of service provisions are often associated with State obligations.[267] Normally, the relevant state arrangements establishing the FAB will also provide the liability framework, otherwise national law will be applicable. This framework is essential for the effective operation of the FAB.[268] Indeed, when liability frameworks are clear and precise, it brings legal certainty, which in turn may attract companies. Furthermore, the Contracting States may lay down conditions for reimbursement from the ANSP and how to use their right of recourse.[269] One should not forget that it is the taxpayers of the State of occurrence that will bear the final responsibility for damages, as that State is always ultimately liable.[270] So, it is crucial for the agreements to provide answers and the possibility of recourse in order to protect taxpayers from bearing the financial burden of the accident simply because an aircraft crashed over their home state without any fault by that State. Unfortunately, as we will see in the following section, not every FAB agreement contains specific provisions for a liability framework.

1.1 FABEC

The FABEC includes Belgium, France, Germany, Luxembourg, The Netherlands and Switzerland. Therefore, it represents one of the biggest blocks: it will be accountable for 55% of the European traffic and encompass most of the major European airports.[271] Due to its size, the number of actors who can be involved in accidents is more significant than in other FABs. Therefore, its liability provisions must be clear and precise.

Chapter 11 of the Treaty establishing the FABEC deals with liability issues involving a cross-border element. According to the first sentence of Article 30.1, the State will bear responsibility. The wording of the second paragraph is crystal clear:

[267] Schubert F, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.116
[268] Ibid, p.122; Commission, 'Functional Airspace Blocks (FABs)' (n 1)
[269] Schubert F, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.122
[270] Even in the case of NATS, which is a private company, if NATS is insolvent then the UK will be oblige to compensate the victims, due to the fact that ANSP is a sovereign function of the State, as stipulated in the Chicago Convention.
[271] Eurocontrol, 'About FABEC' <http://www.eurocontrol.int/articles/about-fabec> accessed 29 June 2014

'No direct action may be brought against the effective air traffic service provider or its agents or any other person acting on its behalf'. Therefore, the primary claim will be against the State, who may then claim compensation from the wrongdoer depending on the arrangement between the relevant parties. This concept is embodied in Article 30.6, which gives Member States the possibility to seek reimbursement from the ANSP for accidents caused by its negligence, or reimbursement from '[…] any other person or operational entity', Article 30.9. Additionally, the State of occurrence and the State of the ANSP can agree on sharing the costs, Article 30.8.

This approach differs from the one used in the agreement conferring powers to the Maastricht Upper Area Control Center (MUAC). Eurocontrol is in charge of the MUAC, therefore it is partially liable for anything that happens over the area covered by the MUAC.[272] The confusion lies in that: according to the FABEC Treaty, the State is primarily liable and then it can ask the ANSP to compensate for its negligence. However, in the MUAC agreement, the contrary is stated: Eurocontrol the ANSP is primarily liable and then can seek compensation from the negligent State. Additionally, Article 30(2) of the FABEC Treaty, clearly stipulates: 'no direct action can be taken against the effective air traffic service provider or its agents or any other person acting on its behalf', whereas Article 28.2 of the Convention establishing Eurocontrol stipulates that Eurocontrol is liable for damage resulting from its negligence and not subject to state immunity. As a result, if an accident occurs over the area under the control of Eurocontrol, no one knows who will be primarily held liable, as there are two pieces of legislation that contradict each other. Article 30 (13) of the Treaty only mentions '[…] bilateral agreements between two Contracting States', which does not apply to the agreement establishing Eurocontrol.

This is not the only contradiction. The Convention delegating power to Eurocontrol contains two incompatible provisions. First, the MUAC can be considered the first FAB established in Europe. Eurocontrol is in charge of the MUAC, and Article 28.2 of the consolidated version of the Convention stipulates that Eurocontrol is liable for

[272] A part of Germany, Belgium and The Netherlands as provided in the amended version of 1981 which amended the 1960 Convention signed in Brussels.
See: Alias, E.02.13(version 00.00.01) (n 154), p. 64

damage resulting from its negligence and that state immunity does not cover Eurocontrol. As stated above, this is in direct contradiction with the principles in the Chicago Convention. Second, as explained before[273], under the Belgian version of the agreement, Eurocontrol is liable for damages imputable to it but the delegation does not extinguish the rights and duties of the Belgian State under international agreements.[274] Here again, the picture is blurry; on the one hand, Eurocontrol will have to pay for damages, but on the other hand, the agreement does not extinguish the duties of the Contracting States under international law. The answer would have been simple, as Eurocontrol would have been liable for the whole amount of damages and have recourse against the State(s) for the damages not due to Eurocontrol's negligence. The remaining problem would then be to determine the applicable law and jurisdiction. This does not fit, however, with the wording of Article 30 of the FABEC Treaty, which states the State is primarily liable. Therefore, in reality it is impossible to know who is primarily liable.

Logically, the Treaty leaves it to each Member State to apply its national law to resolve domestic cases. However, this does not solve the issue of which law to use in cross-border cases, certainly because the Treaty applies only to cases occurring within the FABEC as it has a cross-border dimension. If the ANSP, for instance, provides service over the State is a national case, even if it has delegated some of its power to a foreign ANSP, the case will be considered domestic and the Treaty will not apply.[275] Article 1 (b) further restricted the scope of the Treaty to damages caused by foreign ANSPs designated in accordance with Article 8 Regulation 550/2004.

Now that I have determined that the State of occurrence is liable, it is interesting to know which courts have jurisdiction and which law is applicable. Here, Article 30.5 states that claims must be filed in the State of occurrence and must be decided according to national law, or at least it must be deduced from the wording of the article that it is in the State where the damages have occurred. Following the principle

[273] See section C i State
[274] Article 1(2) of the Belgian version of the agreement conferring power to Eurocontrol
[275] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.59-60

of international law, it is assumed that it will be the court of the place of occurrence that will have jurisdiction. But nothing precludes the possibility that the proper venue may be the home court of the victim, though the victim's home court might be reluctant to hear the case because of State immunity, this is unlikely to be much of a hindrance as Member States have renounced to immunity.[276]

The most problematic limitation in the Treaty, aside from the geographical scope, is that the Treaty is only a last resort remedy under article 30 paragraph 4. According to paragraph 4, victims must first exhaust all available judicial remedies before turning to the Treaty to get compensation not already provided by judicial decisions. In other words, the victim will, according to the Montreal Convention of 1999, have to file a claim against the airline company.[277] Then, he/she can bring a tort claim against the territorial State or the ANSP, relying on article 4(1) of Rome II which makes it clear that the applicable law is the law of the place where the damages arise.[278] Article 30(1) (a) refers to the same principle. Paragraph 4 may be understood differently, namely that the agreement will be applicable if no final decision is rendered. Nevertheless, there is one problem with this interpretation: when paragraph 4 is read in conjunction with the preceding paragraph (paragraph 3), it is clear that paragraphs 1 and 4 are only applicable after a final decision has been given, since the contracting party has two years to bring another claim. The wording of the FABEC treaty does not preclude the victims to directly file a claim against the State or its ANSP, though such a claim would fall outside of the scope of the FABEC agreement.[279]

Although, one may find the protection offered by the agreement extensive, closer examination of the provisions indicates that the Treaty is a last resort instrument and provides few answers beyond the basic one, namely, the State over which the accident occurred is held liable - an answer that could already have been provided by the International Conventions. Many cases are excluded from the scope of the Treaty, i.e.,

[276] Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (n 262), p.4
[277] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.59
[278] Rome II is not applicable according to Article 1(1) as the ANSP is of sovereign nature and Rome II does not apply to wrongful act of a State.
[279] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.59

situations involving national accidents or occurring outside the FAB's boundaries. Additionally, the Treaty only applied when the foreign ANSP was designated according to the provision of Article 8 Regulation 550/2004. But, it should not be overlooked that the Treaty provides a major advantage, namely, a legal mechanism to a State obligated to compensate for the negligence of someone else. For example, Article 30(6) of the Treaty enables such States to seek recourse against a foreign ANSP, or, if the foreign ANSP defaults, the territorial State may sue the State to which the ANSP is linked. And an adequate coverage of the ANSP is required, Article 30.11.

1.2 The South West FAB example.

The South West FAB encompasses Spain and Portugal. Even though Article 27 is one of the shortest articles on the matter, but it is clear, precise and concise. It leaves some room for the contracting States but is generally easily understandable for the involved parties for the following reasons:

First, the scope of the agreement is clear: as the title of the Chapter 15 indicates, it is only concerned with civil liability. Chapter 15 is only constituted of one rather short article, namely Article 27.

Second, Article 27 paragraph 1 stipulates that 'A Contracting State shall be liable for the damage caused by its negligence or that of its agents or of any other person acting on its behalf, under the provisions of this Agreement'. This clearly indicates the State is liable. Paragraph 2, however, includes a safeguard allowing the State to bring an action against another State for reimbursement when the negligence of the other State or any agent acting on its behalf was in fact the proximate cause of the accident.

Finally, unlike FABEC agreements, the FAB agreement specifies the choice of law as being relational to the place where the damages occurred, unless there is an arrangement stating the contrary.

Unfortunately, the provisions still fail to address the question of proper jurisdiction

1.3 The UK-Ireland FAB

This is one of the two currently functioning FABs, however, the text of the State agreement is not available. The only document accessible is the Memorandum of

Understanding. This rather short document mentions nothing about liability. The main legal document leaves the contracting States a lot of freedom. Paragraph 5 of the Memorandum enumerates the reserved matters. From that list it can be deduced that the arrangement is influenced by the Chicago Convention.

Point 6 is dedicated to dispute resolutions, and directs all disputes to be resolved by the National Supervisory Authorities through mutual agreements, or if the dispute is too complex by the FAB Supervisory Committee. However, the Memorandum does not specify the applicable law or forum, or whether the agreement is a last resort instrument. Additionally, there are no provisions on the extent to which the Chicago Convention should be applied. The liability system of these countries is does not differ greatly, therefore the question of liability would be less troublesome than in other FAB.[280]

In order for a delegation of the ATS request to be valid, it should be initiated either by an ATS provider, Eurocontrol or the adjacent State. The request will only be accepted if it is clear that it will improve efficiency and safety. NATS, the service provider for the UK, is in charge of the development of operational procedures and agreements between foreign ANSP and other UK ATS providers. Nevertheless, the Single European Sky requires the FAB to be created in the upper part of the airspace, and the normal internal procedure for delegation of ATS is not applicable. NATS can avail itself of another ANSP's service, as long as it is not contrary to the intra-state agreement. Furthermore, it has been decided that the SES will not apply further than the territorial waters.

1.4 The Danish- Swedish FAB

This agreement is rather short with only 21 articles. Therefore, one might not be surprise to read that no specific article dedicated to liability. Article 14, investigation of accidents and incidents, does not provide any help but only states that accidents or incidents are to be investigated by the Accident Investigation Committee. Article 20

[280] Courts Service Ireland, 'History of the Law: 1691 – present' <http://www.courts.ie/Courts.ie/library3.nsf/pagecurrent/8B9125171CFBA78080256DE5004011F8?opendocument> accessed 29 June 2014

only refers to dispute resolution and the obligation of the contracting States to negotiation in order to resolve the dispute.

It is worth mentioning that Sweden has entered into an agreement with Finland and a part of the Finish airspace has been delegated to the control of a Swedish ANSP.[281] A political declaration was also signed in 2013, with the purpose of enhancing cooperation between the two FABs (NEFAB and Danish-Swedish FAB). Future consolidation of the cooperation is not precluded.[282] Again the agreement does not address liability issues, but does offer only a political agreement to create the so-called 'Free Route Airspace'.

1.5 BLUE MED FAB

The BLUE MED FAB groups Cyprus, Greece, Italy and Malta in a same block, and like some other agreements, contains a specific provisions dealing with liability. Article 25 is fairly identical to Article 30 of the FABEC agreement. Direct action against ANSP or its staff is prohibited, Article 25.2. This agreement can only be used as a last resort remedy after all international remedies have been exhausted, Article 25.3 in conjunction with 25.4. Any claim has to be filed with the State of occurrence, Article 25.5. The ANSP is under the obligation to reimburse the State, paragraph 6, but the State of occurrence and the State of the ANSP can agree on sharing the costs, paragraph 9. Furthermore, the State of occurrence or the ANPS has a right of recourse against any other person or entity, Article 25.10. An adequate coverage of the ANSP is required, Article 25.12. Finally, the Blue Med treaty supersedes the liability provisions in existing bilateral agreements between two contracting States, Article 25.14.

One may think that the content of Article 27, titled investigation of accidents and serious incidents, like in the Baltic FAB, would provide some solutions. Yet, except for the fact that it relies heavily on the Chicago Convention and that it embodies the manner for conducting investigation, the final paragraph clearly states that the article

[281] Risto Murto, 'Annual Report on the Application of FUA chapter 15' LSSIP Year 2011 Finland <https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/reports/2012-fua2011-fi.pdf> (accessed 3 July 2014), p.5

[282] NEFAB, 'Declaration of commitment for cooperation in airspace development between the Governments of Denmark, Estonia, Finland, Latvia, Norway and Sweden' (22 April 2013) <http://www.nefab.eu/749/> accessed 2 March 2014

will, in no way help determine the questions of liability[283], leaving the Member States to determine how to deal with the issue.

1.6 Baltic FAB

The agreement between Poland and Lithuania leaves a lot of room to the Member States involved in the FAB. However, Article 5(2) on sovereignty, stipulates that the agreement will not affect the rights and obligations under the Chicago Convention or any other international agreements to which the contracting States are parties. Chapter 9 addresses liability issues. If one looks at it closely, it is possible to realise that the wording of this article is comparable to the wording to be found in the Treaty establishing the FABEC. Here again, the liability structure under this agreement can be used only as a last resort remedy after all international remedies have been exhausted, for the same reasons stated in the FABEC.

But, there are some notable differences between the two FAB's liability provisions. First, paragraph 13 of the FABEC states that the Treaty supersedes other bilateral agreements which is not provided in the Baltic agreement. Second, Article 30.7 of the FABEC provides that in case of problem of reimbursement by the ANSP, then the States are entitled to refer the case to arbitration under the "Permanent Court of Arbitration optional rules for arbitrating disputes between two States". Finally, paragraph 7 of the Baltic allows the State or ANS to sue any natural or legal person. This right cannot be found in any of the other agreements governing the creation of other FABs.

The FAB agreement must yet be supplemented by different agreements. In respect of ANSP, chapter 3, specially Articles 13, 18 and *seq.*, clearly mentions that the contracting States must enter into a legal agreements with the ANSP. Hopefully, these agreements will cover any possible claim related to liability of the parties.

[283] BLUE MED FAB, 'Demonstration of Compliance for the BLUE MED FAB establishment in accordance with Regulation (EC) No 550/2004 and Commission Regulation (EU) No 176/2011' (v. 2.0, 22 June 2012) <http://ec.europa.eu/transport/modes/air/single_european_sky/doc/2012_06_22_blue_med_fab_establishment.pdf> (accessed 22 June 2014)

The agreement still relies heavily on the Chicago Convention, above all in case of investigations of accidents.[284] Although, this Treaty must be read in conjunction with the Chicago Convention, it still leaves a lot of room for national legislators and supplementation by other agreements. But it does a fairly good job laying out basic liability provisions: Article 27 governs liability in general, choice of law and forum, gives the actors involved the possibility of claiming damages from any wrongdoer, legal or natural, but it remains a last resort remedy.

1.7 FAB CE

The FAB CE includes the largest number of States: Austria, Bosnia & Herzegovina, Croatia, Czech Republic, Hungary, Slovak Republic and Slovenia. This agreement does not have any specific article with respect to liability issues. However, Article 22 relates to dispute resolution and refers to disputes arising with regard to 'interpretation, application and performance of this agreement', which, because it is so broad could encompass a dispute resulting from the liability question. Nothing in the document helps elucidate the scope of that specific article, and therefore we can only extrapolate on what it includes.

1.8 Danube FAB

Likewise, there are no provisions on liability in the agreement between Romania and Bulgaria. The only hint is in Article 27.2, which specifies that in the case of a dispute, the ANSP board may require the SAPSC to deliver an expert opinion. Article 3 stipulates that the agreement does not restrict the freedom of the ANSPs to co-operate with other parties in order to achieve the goals of the Danube FAB. Article 4 lists areas of cooperation, however there is no explicit mention of the liability question. One may presume that liability will be dealt with in point h, which refers to accident and incident investigations.

1.9 North European FAB (NEFAB)

The NEFAB encompasses Estonia, Finland, Latvia and Norway. The NEFAB is unique in the sense that an explanatory note accompanies the legal text, which makes it easier for the reader to understand the drafters' intent. According to the explanatory note to Article 27; 'An obligation imposed upon a State to compensate damages

[284] See article 28 of the Treaty establishing the Baltic Functional Airspace Block

caused to passengers, aircraft operators or third parties on the surface, as a consequence of acts or omissions by an ANSP, only exists to the extent such an obligation is explicitly foreseen by an international convention or by the applicable national legislation of that State. This is the case both for strict liability as well as liability in case of negligence.' Here, the legislation explicitly includes both strict and fault liability. One must pay attention to the fact that this agreement does not, in any case, create prerogatives for individuals neither rights.

Furthermore, it imposes no duty on the States to repair damages caused by air navigation service providers. This can be deduced from the sentence; '[…]obligation is explicitly foreseen by an international convention or by the applicable national legislation of that State'. Currently, there are no international instruments specifically dedicated to State liability with regard to air navigation services. Nevertheless, the aim of Article 27 of the NEFAB agreement is to provide a legal framework that will allow all parties involved to know the extent of their responsibilities and duties and also to diminish the possibility that States will rely on their sovereign immunity to avoid liability. Through this clear legal structure, the legislators also intended to provide legal certainty by designating the appropriate forum and law.

Paragraph 1 of Article 27 makes it clear that a State can only claim damages from another State if it is based on negligence, which excludes strict liability. According to paragraph 2, the ANSP can be held liable; no direct claim might be file against it, but paragraph 3 gives States the right to seek reimbursement from the ANSP. Paragraph 4 adds a twist; if the accident occurred due to negligence from both a national ANS and ANSP, then the cost will be divided proportionally between the two parties. Again, the agreement dedicates in paragraph 5 that the choice of forum and applicable law will be the law of the State where damages occur.

The provisions governing liability issues for NEFAB are straightforward and do not require further agreements. Additionally, a sub-agreement between Norway and Finland service providers is integral part of the NEFAB agreement. The agreement

sets a legal framework for the supervision of cross-border ATS provision.[285] However, NEFAB includes nothing with respect to its relationship with international conventions except in the explanatory note. This point will probably have to be clarified by the competent authorities.

[285] Murto, LSSIP Year 2011 Finland (n 281), p.5

2. Comparing the agreements

After having looked in details at each of the inter-state agreements, we can try to compare them. Even though the grounds for comparison is how liability is treated in each FAB, as we will see, this is not an easy task due to the various approaches the Member States have taken with regard to that specific topic. However, we will work toward the best solution to solve the problem.

Some of the agreements are similar or adopt the same wording. For instance the agreement establishing the FABEC, BLUE MED and the Baltic FAB are nearly a direct replica of each other. These three agreements are the most detailed and yet ultimately, it is clear that the State of occurrence is liable, which could be established simply by looking at international law. It is not however until the fifth or sixth paragraph of FABEC, BLUE MED and Baltic FAB that this is stated, which may lead to confusion. Furthermore, it is clear from the provisions that the agreement is only a last resort instrument. A reading of these agreements suggests that while the liability provision was included, the Member States did not really want to deal with the problem in depth and therefore took the easiest solution, namely to create an article based on a broad International Convention containing many exceptions. The provisions on the question of jurisdiction or choice of law are not clear; they state 'Claims for compensation as provided for in Article 30.1 shall be filed with the Contracting State concerned', in other words, the State of occurrence. But since the three agreements are last resort instruments, no guideline is given about the competent court or law applicable to the case at first. This complicates finding a solution in a given case. But in a sense it is not really surprising, at least with regard to the FABEC, as already in the Agreement conferring power to the MUAC (Maastricht Upper Area Control Center) no choice of law or jurisdiction provisions were included either.

The NEFAB agreement is the only agreement that explicitly states that a Member State can sue another State for costs incurred by the first State as a result of the negligence of the second State. The same holds true for Article 27, paragraph 2 of the South West FAB arrangement. Although, one may assume that it is also the case for the other FABs, this is not the fact.

Few arrangements explicitly refer to the choice of law and jurisdiction questions, namely the NEFAB, FABEC, BLUE MED and Baltic agreements. In the South West FAB agreement, the provision only deals with the choice of law issue but not jurisdiction. The Baltic arrangement is also unique in that it contains the possibility for the State or ANS to sue any natural or legal person arrangement, Article 27 paragraph 7. This right cannot be found elsewhere in the agreements governing the other FABs.

Notably, none of the agreements helps resolve the question of what will happen in the case of a cross-border collision between two FABs. Let us take the example of an aircraft flying from Florence to Brussels, which, just as it leaves the Italian airspace and enters the Swiss airspace, crashes over Switzerland due to a gap in information between Italy and Switzerland. How do we determine liability here? Switzerland will have to pay but could it claim damages from Italy? That question will have to be solved by international or national law because the agreements provide no assistance. The situation is different in the case of Sweden and Finland, whereby a Swedish ANSP delivers service over a part of Finish airspace and liability is dealt with, these two countries are in different FABs. Additionally, there is an agreement between these two states.[286]

What is even more striking from the comparison of all the agreements is that some FABs, namely FAB Central Europe, Danish-Swedish FAB and Danube FAB, have no provisions on liability, leaving the answers to be provided by national laws. But, examination of the agreements that include liability provisions suggests that ultimately, the answer will likewise also be given by national and international law. The fact of having provisions creates legal certainty. One point is clear in all the agreements, the State of occurrence will be primarily liable and has jurisdiction, which is similar to Article 20 of the Rome Convention but much more restricted than Article 33 of the Montreal Convention.

It is mostly a matter of taste and expectations, but in my opinion, the NEFAB and South-WEST Europe FABs are the most complete and straightforward agreements.

[286] Murto, LSSIP Year 2011 Finland (n 281), p.5

The Commission has perhaps made a mistake by requiring close cooperation within a FAB without requiring the States to include a provision on liability containing similar information, leading to individualistic behaviour of each FABs.[287]

ii. Airports

Most Member States have followed the requirements laid down in the Chicago Convention, more precisely in Annex 14.[288] Annex 14 outlines in detail the standard characteristics for aerodromes. Article 15 of the Convention requires the States to make airports available on its territory for both domestic and international flights.

In general, major airports are linked to the State; either they are operated by the State or by a private body especially licensed by the State. An example of the latter is Schiphol Airport, created as a limited liability company so that it is a private company but it is partially publicly owned.[289] As a result the State will bear the responsibility if accidents occur. Airports are not free from all responsibility; an airport may be held contractually liable or liable based on tort, depending on the activities that cause the damages.[290] For instance, in the case of the Concorde accident, the airport was also held liable due to its negligence in cleaning the runway.[291]

There is a trend to privatize airports in order to improve efficiency, which may change the extent of State liability.[292] Airports may be held responsible and obliged to compensate for personal injuries or property damages that occur on the airport

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[287] Lawless (n 20), p.78
For a quick overview please refer to the table in Annex 1

[288] The annexes of the Convention have a special status; they are derivative international norms which are mandatory as soon as the signatory states accepted the power of ICAO See: "Les normes contenues dans les Annexes ne sont donc en aucune façon des normes conventionnelles, ce sont des normes internationales dérivées qui ne sont obligatoires que si l'organe international qui les a édictées a reçu des Etats, qui en sont les destinataires, pouvoir de prendre des décisions liant les membres de l'O.A.C.I."
Retrieved from: Henri Rolin, 'La portée juridique des annexes à la Convention de Chicago un désaccord entre les jurisprudences Française et Belge' (1973) 9 Revue Belge de Droit International 403, p.406; International Civil Aviation Organization, *Annex 14, Volume I, Aerodrome Design and Operations* (5th ed, ICAO, 2009)

[289] du Perron (n 85), p.210; Guillaume Burghouwt, *Airline network development in Europe and its implications for airport planning* (Ashgate Publisher, 2007), p.211-212

[290] du Perron (n 85), p.211

[291] Harding (n 158), p.25

[292] Clifford Winston and Ginés De Rus, *Aviation infrastructure performance a study in comparative political economy* (Brookings Institution Press, 2008), p.37

premises.[293] Depending on the facts of the case, the claim might be based on contract or tort. However, the terms of a contract may contain clauses excluding liability although even if there is such a clause in the contract, the clause might be unenforceable for various reasons, such as unfairness. It is common for airports to be insured against such claims.[294]

According to the UK Occupiers' Liability Act 1957, the airport owes a duty of care to the passengers; this duty obliges the airport to provide reasonably safe premises to the passengers. This duty is limited and does not extend to injuries occurring in places where passengers were not expressly or implicitly invited to go. The mere fact that warning signs have been placed in the premise does not automatically release the airport from its liability. As always under Common law, it is the judge who decides whether such a duty was owed and whether it was breached when looking at all the evidence. The airport also owes a limited duty to trespassers under section 1 of the Occupiers' Liability Act 1984, but only when the airport knows or could foresee the risk of danger. In the case of an independent contractor causing an injury, the airport can only be sued under contributory negligence.

Of course, when speaking about airport liability, what is really meant is liability of the airport operators, such as airport managers or directors who are held responsible.[295] They will be vicariously liable for the damages caused by their employees, in countries where such vicarious liability exists in the law. This is above all the case in countries where employers or managing board can be held vicariously liable for the

[293] The airport can be liable for nuisance but only if the noise exceeds the maximum amount allowed by national and European legislations. In the UK, statutory nuisance caused by noise, including vibrations, may lead to tort claims. Claims can be established under the Environmental Protection Act 1990 part III.
See: Alissa M. Dolan and Richard M. Thompson, 'Integration of drones into domestic airspace selected legal issues' (Congressional Research Service, Library of Congress, 2013) R42940 <http://fas.org/sgp/crs/natsec/R42940.pdf> (accessed 3 July 2014), p.2; Kevin Gray, 'Property in Thin Air' (1991) 50 Cambridge Law Journal 252, p.1; Bartsch (n 126), ch. 6 and 16; MOD Corporate Environmental, ' Statutory nuisance' (Leaflet 4) JSP 418 <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/27606/JSP_418_Leaflet04.pdf> (accessed 3 July 2014)
[294] Harding (n 158), p.25
[295] Alexander T. Wells and Seth Young, *Airport planning & management* (McGraw-Hill Publisher, 2004), p.44

wrongdoing of their employees.[296]Nevertheless, one should keep in mind that, generally speaking, the State will be liable first before it can use its right of recourse against the airport. Nothing will change with the implementation of the SES.

iii. Airline companies

When a person books a flight ticket, he/she enters into a contract with the air carrier. Both parties have rights and duties stemming from this contract. For example, the passenger must pay and comply with the rules of the airline company with which he/she has contracted. But he/she also has the right to claim damages if the air carrier does not fulfill its obligations, such as delays or damaged baggage.[297][298] In addition to contract law, air carriers can also be sued under tort law, and can also sue other wrongdoers under tort law.[299] Therefore, it is not always the airline companies being sued it can also be the other way round.

In the last decade, the Union legislator has been keen on enlarging the protection offered to consumers in general. This trend is also noticeable in the field of airspace transport, as exemplified by the entry into force of Regulation 261/ 2004. The Regulation reinforces the right of passengers against airline companies under certain circumstances. The Regulation is crucial in providing a framework for liability in cases where denial of boarding, cancellation or long delay results in damages. One of the most common examples would be when the airline company is unable to use the aircraft for another scheduled flight due to its delay. Before, only international or national liability regime would have applied.[300] The new regime is rather strict and permits only one defense: 'extraordinary circumstances' such as force majeure.[301]

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[296] At Common law and in France and the Netherlands no fault on the part of the employer is needed, whereas in Germany, employers will only be liable if he committed a fault but there is a rebutable presumption of it, §831 BGB. At Common law three conditions need to be fulfilled.

[297] In case of an actual and contractual carrier, the one having been sued can sue the other one according to their contract.

[298] Montreal Convention and Regulation 889/2002. See also: IATA, 'Conditions of contract and other important notices'<http://www.flytap.com/mediaRep/editors/Contentimages/PDFs/Outros/Condicoes_Transporte/responsabilidade/en/MONTREAL_EN.pdf> accessed on 22 June 2014, p.2-3

[299] Erotokritou (n 146), p.2

[300] CATS, 'legal assessment: contract- based air transportation system' (2007) Report D. 2.2.3 <http://www.cats-fp6.aero/doc/CATS_D2.2.3_Legal_Assessment_V10.pdf> (accessed 22 June 2014), p.27

[301] Article 5(3) Regulation 261/2004 dealing with cancellation of a flight.
It is clearly mentioned in the article that the airline company and the crew should have took all the necessary measures: 'An operating air carrier shall not be obliged to pay compensation in accordance with Article 7, if it

Nevertheless, a right of redress is embodied in Article 13 of the Regulation, allowing the company to obtain compensation from a third party who causes the cancellation or delay. Most airline companies flying in Europe have transposed the Regulation's provisions directly in their policy.[302]

Another aspect of liability is covered by Regulation 2027/97 which aims to define and harmonizing the duties of European air carriers under European law with respect to their liability. The Regulation is heavily based on the Warsaw Convention, which can be deduced from the Preamble and Article 2(2).[303] Nevertheless, the scope of the Regulation is very narrow, applying only to damages which occurred on board an airplane or while embarking or disembarking.[304] The liability that airline companies bear is unlimited and therefore cannot be restricted through contract, convention or law, as stipulated in Article 3(1) (a) of the Regulation. The only defense available to the airline companies is to prove that the damages were directly caused by the negligence of the passenger, paragraph 3 of the same article. This differs from the fundamental principle of airline liability embodied in the Warsaw Convention and international protocols, as normally the liability of airline companies is limited.[305] However, in both the Regulation and the Warsaw Convention, the liability is based on fault of the airline company. But in practice apparently the Regulation is not really used as there are inconsistencies with the Warsaw Convention.[306] Additionally, airline

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can prove that the cancellation is caused by extraordinary circumstances which could not have been avoided even if all reasonable measures had been taken'.

[302] For instance Alitalia, British airways, Brussels Airline, Air France, Swiss Air, etc

[303] Elmar Giemulla and Maria Schimd Ronald, 'Council Regulation (EC) No. 2027/97 on Air Carrier Liability in the Event of Accidents and its Implications for Air Carriers' (1998) 23 Air & Space law 98, p.98

[304] Europa, 'Air carrier liability in the event of accidents' <http://europa.eu/legislation_summaries/consumers/protection_of_consumers/l24169_en.htm> accessed 29 June 2014; Giemulla and van Schyndel, 'Liability in European Law' (n 154), p.341

[305] An attempt to established unlimited liability was done with the 1995 IATA 'Intercarrier Agreement on Passenger Liability' (IIA) and the 1996 'Agreement on Measures to Implement the IATA Intercarrier Agreement' (MIA) but they were declared null and void. See: Lorne S. Clark, 'European Council Regulation (EC) No. 2027/97: will the Warsaw Convention bite back?' (2001) 26 Air & space law 137, p.138-139; Doo Hwan Kim, 'The innovation of the Warsaw system and the IATA intercarrier agreement', in Doo Hwan Kim and Chia-Jui Cheng (eds), *The utilization of the world's air space and free outer space in the 21st century: proceedings of the International Conference on Air and Space Policy, Law and Industry for the 21st Century held in Seoul from 23-25 June 1997* (Kluwer Law International, 2000), p.65; Paul Stephen Dempsey, 'International air cargo & baggage liability and the Tower of Babel' (2004) 36 George Washington international law review 239, p.247; Hwan Kim, 'Some considerations of the draft for the convention on an integrated system of international aviation liability' (n 139), p.780; Brian F Havel and Gabrial S Sanchez, *The principles and practice of international aviation law* (Cambridge University Press, 2014), p.260-261

[306] Clark (n 305), p.143

carriers are obliged to contract insurance with regard to damages, Article 3(2). However, the passenger should insure his luggage if the value of its contents exceeds the applicable limit of liability established by the airline company.[307]

Regulation 889/2002 attempts to bring European law in line with the Montreal Convention. It harmonizes defenses that could be used by air carriers as well as the limits to their liability. Article 3(1) stipulates that community carriers' liability is governed by the Montreal Convention, which amended the Warsaw Convention. The level of protection and compensation is lower in the Regulation.[308] But sometimes the rights are identical, for instance the passenger can sue either the contractual or actual carrier.[309] The Community needed to legislate as the Convention set new rules on liability in international air transport.[310] Again this established an unlimited liability regime.[311] For instance, the obligation of insurance was added and expended. This obligation is to be found in SES Regulation 1070/2009 too. Similar articles and requirements are to be found in Regulation 2027/97.

One may conclude that the liability of airline companies towards passengers is broadly regulated by EU law. These regulations have brought legal certainty because most airline companies have transposed the regulations into their policies. However, with regard to the possibility for airline companies to sue the wrongdoer, no EU law is to be found. Consequently, only international and national law will be applicable. A similar approach is to be taken with regard to tortious matters, whereby the State

[307] Article 6(2) Regulation 785/2004 stipulates: 'For liability in respect of baggage, the minimum insurance cover shall be 1 000 SDRs per passenger in commercial operations'. Therefore if the value exceed the 1 000 SDRs, then it is for the passenger to contract an additional insurance. It is worth mentioning that this amount is identical to the one in the Montreal Convention and that it does not prohibit airline companies to fix a higher threshold. So before contracting an additional insurance, the passenger should check the airline policy, as it might be that the company refuses to take responsibility for certain objects, for instance jewelry, fragile or valuable goods, etc.
See for instance: IATA, 'Conditions of contract and other important notices' (n 298), p.2

[308] For instance in case of destruction of baggage, Article 22 of the Montreal Convention states that the amount should be no more than 1131 SDR while in Annex 1 of the Regulation it is only 1000 SDR.

[309] Article 40 of the Montreal Convention and Annex 1 of the Regulation

[310] Europa (n 304)

[311] The regime in the Regulation is similar to the strict liability regime embodied in Article 17 of the Montreal Convention whereby the victim only needs to prove that the damages were caused by the accident.

might be liable but can subsequently seek recourse against the airline company.[312] Therefore it is important to determine the ownership of the aircraft in order to hold the right party liable.[313] However, none of these regulations are the direct result of the implementation of the SES.

[312] However it is a right of recourse not a duty and therefore discretion is left to the State or airline company whether it wants to bring a claim or not. The same can be found in Article 37 of the Montreal Convention.
[313] Gbenga Oduntan, *Sovereignty and jurisdiction in the airspace and outer space : legal criteria for spatial delimitation* (Routledge Publisher, 2012, p.82

iv. Insurance companies

Insurance coverage is a good way to allocate risk and create incentives to hedge against things containing higher risks. Insurance coverage allocates the risk between the insured and the insurer. The airline companies -flying within, over or out of the Union- are required to have adequate insurance coverage that is especially designed for the risks involved in aviation activities.[314][315] This requirement is embodied in secondary European legislation, namely in Regulation 785/2004 and in international conventions.[316] Aviation insurance policies are unique and should not be compared to normal insurances or even the insurance for other areas of transportation because airline companies are exposed to risks that are so difficult to evaluate.[317][318] Furthermore, there are numerous types of aviation insurance coverage all of which are enumerated in Article 4 of the Regulation 785/2004, namely; public liability insurance, passenger insurance and, hull insurance.

Passenger liability insurance is mandatory in most countries for commercial and charter flights. The coverage is embodied in the carriage contract.[319] In general, the insurance is sold to the passenger on a per-seat basis and offers coverage for injuries or death of the passenger. Article 6 (1) of the Regulation sets the minimum amount the insurance should cover, which is 250 000 SDRs[320] per passenger. Nevertheless, the

[314] Article 8 (2) and (6) give the possibility to Member States to refuse a non-Community aircraft to land if it failed to comply with the insurance requirements.

[315] Ladd Sanger, 'Mandatory aviation insurance: a Domestic and International perspective' <http://www.slackdavis.com/wp-content/uploads/2009/05/mandatory_aviation_insurance08.pdf> accessed 29 June 2014, p.2; Alias, E.02.13 (version 00.01.02) (n 157), p.45; Allianz, 'Aviation & Aerospace' <http://www.agcs.allianz.com/services/aviation/> accessed 23 April 2014

[316] For instance see Chapter III of the Rome Convention

[317] Insurances are mostly based on the value of the aircraft, its ownership, the amount of liability, etc. Therefore, it is really unlikely that private model of insurance will work since the insurance's companies might not have enough resources to bare the risks and pay in case an accident occurred.

[318] International Union of Aerospace Insurers, 'A guide to aviation insurance: International Union of Aerospace Insurers' (2012) <http://www.oecd.org/daf/fin/insurance/4.DavidGasson-background.pdf> accessed on 23 April 2014, p.1

[319] Alias, E.02.13(version 00.00.01) (n 154), p.38

[320] Special Drawing Rights: 'The SDR is neither a currency, nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. Holders of SDRs can obtain these currencies in exchange for their SDRs in two ways: first, through the arrangement of voluntary exchanges between members; and second, by the IMF designating members with strong external positions to purchase SDRs from members with weak external positions. In addition to its role as a supplementary reserve asset, the SDR serves as the unit of account of the IMF and some other international organizations'. Retrieved from: International Monetary Fund,

level is decreased to a minimum of 100 000 SDRs per passenger with respect to non-commercial operations by aircraft with a Maximum Take Off Mass (MTOM) of 2 700 kg or less. It is up to Member States to decide whether to lower the level or not.[321]

Public liability insurances are designed to cover owners of airplanes for damages caused by their aircrafts to the property of third parties. This type of insurance does not cover damages caused to the insured aircraft. The insurance will only reimburse damages done to houses, airport premises, cars, etc. If an accident occurs, the insurance company will compensate victims for their losses via a friendly method that does not involve the court. As indicated in Article 7 of the Regulation, airline companies are obliged to purchase this kind of insurance.[322]

Several companies propose to combine the two above-mentioned types of insurance into a single package. Therefore, the maximum amount of coverage per accident has a single overall limit. This solution offers more flexibility to the insurance companies, especially when not many third party properties are damaged but many passengers are injured.[323]

Hull insurances cover the aircraft itself.[324] Article 4(1) of the Regulation mentions this kind of insurance without naming it Hull insurances. There are two types of hull insurances: that which covers the airplane while it is motionless on the ground and that which covers the plane when taxiing.[325] Damage for the first type is mostly due to incidents such as fire, vandalism, theft, or war. The second type does not cover landing and take-off' generally it ceases to cover the plane when it takes-off and covers the aircraft only when it has completed the landing and it is driving to the parking place. Since it is complicated to draw a line between the mere fact that the airplane was taxiing or if it was attempting to take-off, most of the time insurance companies avoid

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'Special Drawing Rights (SDRs)' (25 March 2014) <http://www.imf.org/external/np/exr/facts/sdr.htm> accessed 23 April 2014

[321] Article 6(1) Regulation 785/2004

[322] Sanger (n 315), p.2

[323] Alias, E.02.13(version 00.00.01) (n 154), p.38

[324] Diederiks-Verschoor (n 193), p.248; International Union of Aerospace Insurers (n 318), p.1

[325] Alias, E.02.13(version 00.00.01) (n 154), p.38; Harding (n 158), p.7

providing that kind of coverage.[326] Yet, that does not mean that planes are not insured during these phases; mostly airline companies subscribe to an 'in-flight' insurance which covers the aircraft at all stages of the flight and ground operations, including parking. The Rome convention of 1952 was the first instrument that provided the State with the possibility of requiring an insurance that covered liability on the ground only however, it received little ratifications.[327] Similarly, Article 50 of the Montreal Convention requires States to have an adequate coverage.

The SES contains no reference to the relationship between the SES Regulations and Regulation 785/2004. However, insurance is included in the SES Regulation, as listed in the common requirements of article 6 Regulation 550/2004. Therefore, one may conclude that Regulation 785/2004 will be applicable. Moreover, it seems rather logical that each aircraft and flight should be insured due to the risk of financial consequences of a collision.[328] Additionally, companies should be insured against legal claims in case of death, injury or physical damages.[329]

Although, the scope of Directive 123/2006 does not cover air transport, as clearly stated in Article 2(2) (d), the insurance's requirement of Article 23 is of similar wording in Article 6 of Regulation 550/2004 with respect to ANSP.[330] Article 23 of Directive 123/2006 requires all providers which operate in the Union to be covered by professional liability insurance based on the nature and the type of risks that may arise from their work. Here again we see the willingness of the Union to create a market in the sky which would be the counterpart of our existing internal market.

As a result of European secondary law, a service provider is under a 'double' obligation to be insured if it wants to be appointed as an ATM service provider within the Union; first at national level and second at FAB level.[331] Nevertheless, problems

[326] QBE, 'Insurance Products Glossary' <http://www.qbeeurope.com/aviation/glossary.asp> accessed 8 May 2014
[327] Alias, E.02.13(version 00.00.01) (n 154), p.38
[328] Imposed by the second paragraph of Article 4 of Regulation 785/2004
[329] Harding (n 158), p.9
[330] In order to be designated as an ANSP, the provider will need to contract a valid insurance.
[331] Alias, E.02.13(version 00.00.01) (n 154), p.39

persist because there is no standardized insurance policy with respect to ANS liability, one must look at all the different insurance agreements separately.[332]

Lastly, it is also possible, though rare, that a contract between manufacturer and purchaser of software to include measures that displace liability. This means that one party agrees and commits himself to cover the damages caused by the product sold by the other party. In other words, the purchaser of a software agrees to reduce the liability of the producer because he is covered by an insurance in case the software is defective.[333]

[332] Chatzipanagiotis (n 124), p.339
[333] Moccia (n 166), p.121

v. Controllers

Air traffic is not possible without controllers, and they hold heavy responsibilities. Air traffic controllers must prevent collision, either on the ground or in the sky, and take care of the safety of the passengers and third parties on the ground.[334] In order to prevent collisions, the controllers must ensure that flights remain separated from one another and do not enter into specific areas of the airspace that are not open to them.[335][336] Additionally, civil aircrafts are very expensive and the controllers' job includes ensuring that nothing happen to the airplanes themselves.[337] Given the riskiness of their job, controllers want to know what liability they face.

If there are no loopholes in the law, then a controller will be liable *per se* for a collision under his watch.[338] However, another parameter restricts the controllers' *per se* liability: in most Member States, such as France and Sweden, controllers are civil servants.[339] Switzerland does not consider controllers civil servants, but their status is comparable to that of a public function, leading to the same result as in France and Sweden.[340] Consequently, it is the State that will have to first indemnify victims, before taking any actions against the negligent control officer.[341] The type of recourses a State has against the negligent controllers, with regard to civil liability, vary from Member State to Member States. For instance, in France, the State could only use administrative sanctions against air traffic controllers[342] whereas in Germany, UK and Italy, due to the fact that the ANSP is a private entity, the controllers cannot seek protection under the umbrella of State liability and will be held directly liable.[343] This difference makes it is interesting to look at to what extent controllers are liable and how that fits into the broader picture of liability within the SES. A judge cannot look only at the ultimate actor involved, but rather, must look at the broader picture because

[334] du Perron (n 85), p.205
[335] For Instance some sectors are reserved to military aviation.
[336] Joyce (n 185), p.2; Garcia-Chico (n 191), p.12
[337] Erotokritou (n 146), p.1
[338] Eurocontrol, Note EEC No. 06/05 (n 114), p.2
[339] Erotokritou (n 146), p.1; Eurocontrol, Note EEC No. 06/05 (n 114), p.3
[340] Eurocontrol, Note EEC No. 06/05 (n 114), p.44
[341] Erotokritou (n 146), p.1
[342] Eurocontrol, Note EEC No. 06/05 (n 114), p.23
[343] Ibid, p.44

latent conditions can change the outcome of a case.[344] In other words, the interaction between the man and the machine renders it impossible to isolate their respective actions.[345]

The first legal instrument to define the liability of air controllers was the Warsaw Convention of 1929. This definition was consolidated by the Montreal Convention of 1999. Nevertheless, a universal convention regulating air traffic controller liability is still nonexistent. Even the ICAO document 4444, which purports to provide precise provisions for technical and operational aspects of air navigation generally fails to reference controller liability.[346] In the 1960's, the ICAO committee drafted a Convention on liability for Air Traffic Control. This proposal attempted to provide a complete and uniform set of rules to deal with all aspects of liability of the Air Traffic Control Agencies, however it did not include liability of controllers.[347] Consequently, it might not be surprising that the question of liability was not dealt with in the Chicago Convention of 1944. This omission is probably due to the fact that the issue was touching upon the States' sovereignty, even if Annex 11 of the Convention lists the functions of a controller. The drafters of the Convention preferred to leave the answer to this delicate question to national law.

In the US, the controller owes a duty of care to the pilot, according to the rulings in *United States v Union Trust*[348] and in *Eastern Airlines v Union Trust*[349]. It is unclear whether the same duty applies in Europe. Additionally, in the US when a TCAS order[350] is given, the controller stops being responsible for the traffic separation and

[344] Ottimo (n 237), p. 293; Whittingham (n 180), p.48
[345] Garcia-Chico (n 191), p.23
[346] Erotokritou (n 146), p.1
[347] van Antwerpen, *Cross-border provision of air navigation services* (n 160), p.204

[348] 330 U.S. 907 (1955)
[349] 221 F.2d 62 Cir. (1955)
[350] Traffic Collision Avoidance System; is a system which 'utilizes a satellite navigational system to continuously determine object motion parameters relative to the earth's surface and exchanges this information with other objects. The system calculates collision potential with other objects that are stationary or in motion based on the exchange of the motion parameters.'
Retrieved from: M.A Eberwine and D.B Eberwine, *Integrated air traffic management and collision avoidance system* (application n° US 09/221,925, patent n° US 6133867 A, 17 October 2000), p.1
The system is also designed to answer to the questions and advice the pilots in order to avoid a collision.

for the aircraft until the pilot informs him that the problem has been solved.[351] Even though a hierarchy has been established, by both Eurocontrol and ICAO, which rank TCAS advices higher than controller one[352], it has not been made clear whether the responsibility of the controller is entirely extinguished like in the US or not.

States are placed under the enormous burden of providing air navigation services, and are also the first to pay compensation. After, a State can decide to sue the wrongdoer; this action can be both an action for negligence and a criminal prosecution. The reason for the vicarious liability of the State towards its agents is that the controller may not be, financially, able to indemnify all the victims.[353] However, when the air navigation service provider is a private company, then the State will not be primarily liable but only liable for damages arising out of its negligence. It remains unclear whether the liability of the controller would be reduced if someone assisted the controller in his tasks or influenced him in his decision process. It is said that liability is not transferrable but nothing is stated with regard to the reduction of it.

vi. Pilots

None of the International or European instruments ever clarified the relationship between air traffic controllers and pilots.[354] The controllers and pilots are under a duty to communicate at all times during a flight.[355][356] The latter is under the duty to obey to the former, according to the Chicago Convention Annex 2. This poses problems with regards to liability, as it is unclear whether the controller or pilot would be held responsible for a collision.[357] The picture has been made even more complex with the introduction of Traffic Collision Avoidance System (TCAS). What makes this relationship- air controller, pilot and TCAS- so complicated to analyse is partially due

[351] Garcia-Chico (n 191), p.21
[352] International Civil Aviation Organization, *Airborne collision avoidance system (ACAS) manual* (1st ed, ICAO, 2006), provision 5.2.1.14; Garcia-Chico (n 191), p.21; Eurocontrol Mode S and ACAS Programme, 'Controller and Pilot ACAS regulation and training' (2004) <http://www.skybrary.aero/bookshelf/books/100.pdf> accessed 25 April 2014, p.2
[353] Erotokritou (n 146), p.1
[354] du Perron (n 85), p.207-8
[355] The pilot will have contact with various air controllers. He will have to change radio frequency, under controller request, and therefore controllers when he is flying over a different sector.
[356] Garcia-Chico (n 191), p.13
[357] du Perron (n 85), p.207-8

to the fact that TCAS are airborne systems invented to function independently of air traffic control.[358] Generally, when a pilot receives an advisory resolution from the TCAS, it does not conflict with the controller's orders. Moreover, the controllers are usually not surprised by the alert because, either they know a collision could happen, or because the STCA[359] alerted them of the problem.[360] However, it is possible that the information received conflicts; then the question is, who does the pilot need to follow? And in the event of an accident, who is liable?

Under Annex 2 of the Chicago Convention, pilots are bound to follow the air traffic control officers' instructions[361] because it is believed that controllers have more knowledge than pilots. Surely, the controllers know more about the local elements than pilots, but above all, thanks to their equipment, the controllers have access to an overall picture of the air traffic in real time.[362] But the picture changed with the mandatory introduction in Europe of ACAS II[363]/TCAS[364]. Still, there remains no liability provision at the International or European level. However, guidelines have been established as to the hierarchy of orders to obey in the event of conflicting orders.[365]

TCAS was first introduced as a monitoring backup in case both the controller and pilot failed to detect the danger. It can be defined as a last-resort safety system.[366] The

[358] Steve Henely, 'TCAS II', in Cary R. Spitzer, *The avionics handbook* (CRC Press, 2001), p.18-1
[359] Short Term Traffic Alerts 'is one among many different alert systems preventing airplanes from colliding in the air. STCA communicates with air traffic controllers while there are other systems like TCAS that communicate directly with the pilots.' Retrieved from: Bång Ola Norén, 'STCA - an aircraft conflict alert system' (Master thesis, Linköpings Universitet, 2004) <http://www.diva-portal.org/smash/get/diva2:19627/FULLTEXT01.pdf> accessed 29 June 2014, p. 1
[360] Peter Brooker, 'STCA, TCAS, Airproxes and collision risk' (2005) 58 Journal of navigation 389, p.389
[361] Erotokritou (n 146), p.1
[362] du Perron (n 85), p.208
[363] 'Airborne Collision Avoidance System is an airborne avionics system which acts independently of ATC as a last resort safety net to mitigate the risk of midair collision.' It is also named TCAS version 7.1. Retrieved from: Eurocontrol, 'ACAS II Guide: Airborne Collision Avoidance System II (incorporating version 7.1)' (ed 1.0, 2012) <http://www.eurocontrol.int/sites/default/files/content/documents/nm/safety/ACAS/safety-acas-guide-airborne-collision-aviodance-system-incorporating-version-7.1-201201.pdf> accessed 23 April 2014, p.8
[364] ACAS II has been mandatory in all airplanes since 2012 in Europe
[365] Julia Layton, 'What measures are in place to safeguard against mid-air collisions?' <http://science.howstuffworks.com/transport/flight/modern/mac.htm> accessed 2 March 2014
[366] Eurocontrol, 'ACAS II Guide: Airborne Collision Avoidance System II (incorporating version 7.1)' (n 363), p.8 ; Garcia-Chico (n 191), p.7

TCAS should help the pilot realise and visualize potential threats to the aircraft.[367] Additionally, it should provide advice as to the maneuvers that will help an aircraft maintain a safe distance from other objects. Furthermore, the TCAS should sync the orders it gives to an airplane with information from other airplanes.[368] For a long time, when there was a conflict of information, similar to that in *Überlingen mid-air collision*, the pilots would not follow the TCAS.[369] The reason is firstly because controllers have a broad picture and secondly because the TCAS is a tool to help pilots. The system has limits; it cannot handle all situations. The information in the system must be accurate and it cannot predict how the pilot of the threatened aircraft will react.[370]

However, after *Überlingen mid-air collision* and the *Japan mid-air collision*, ICAO clarified the relationship between ATC and TCAS RA information. It has been established, by both Eurocontrol and ICAO, that the pilot should follow the TCAS advice and certainly not make any manoeuvre in the opposite direction from that advice, regardless the situation.[371] In some countries, the obligation of the pilot to follow the TCAS RA has been phrased in much stronger terms. For instance, in the UK, the Civil Aviation Authority explicitly stated that in the case of conflicting information between the TCAS and the ATC, the pilot is under obligation to follow the advice of the TCAS. Furthermore, the pilot should, as soon as possible, inform the controller of the RA who may be unaware of it.[372] According to ICAO 5.2.1.14.2, the controller should not provide separate services to the aircraft which follow the TCAS RA, or any contrary information.[373][374] Nevertheless, the controller is not precluded for

[367] Henely (n 358), p.18-1; U.S department of Transportation and Federal Aviation Administration, 'Introduction to TCAS II version 7' (2000) <http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CEgQFjAC&url=http%3A%2F%2Fwww.arinc.com%2Fdownloads%2Ftcas%2Ftcas.pdf&ei=P4TrUuadEeav4ASv54DwBA&usg=AFQjCNHUSIss9dtplP3_xBy3MFbr6UX6lg&sig2=BOOj_RdC3LR1HPN2r3DGVQ> accessed 23 April 2014, p.5

[368] U.S department of Transportation and Federal Aviation Administration, 'Introduction to TCAS II version 7' (n 367), p.7

[369] Erotokritou (n 146), p.1

[370] U.S department of Transportation and Federal Aviation Administration, 'Introduction to TCAS II version 7' (n 367), p.7

[371] International Civil Aviation Organization, *Airborne collision avoidance system (ACAS) manual* (n 352), provision 5.2.1.14; Garcia-Chico (n 191), p.21; Eurocontrol Mode S and ACAS Programme (n 352), p.2

[372] Garcia-Chico (n 191), p.21; Eurocontrol Mode S and ACAS Programme (n 352), p.2

[373] International Civil Aviation Organization, *Airborne collision avoidance system (ACAS) manual* (n 352)

giving complementary information to the pilots.[375] Confusion may arise when the controller simultaneously receives information from more than one RA, which could lead to an error in guidance of other flights.[376]

The Chicago Convention also stipulates, in Chapter 4 of Annex 6, that since the pilot is ultimately responsible for the safety of the passengers and retains the right to make final decisions.[377] Yet, it is common practice for pilots to follow the instructions given by either the TCAS or the controller, if they are similar, unless particular circumstances lead him to take other action.[378] The pilot can be held accountable for non-compliance with the given instructions.[379] On the one hand, his liability may be reduced, but certainly not absolved, if he follows the instructions given by the traffic controller. This is particularly true when the instructions or information given is questionable and the pilot realised this even as he followed it.[380] On the other hand, the pilot can be held liable for non-compliance with the TCAS RA order.[381] Therefore, the pilot owes a duty of care to his/her passengers and can be held responsible on the basis of his/her negligence. Additionally, pilots can face criminal charges for an accident.[382]

This makes it seem as though the pilot is under an obligation to obey to the TCAS RA. Nevertheless, the pilot makes the ultimate decision whether to comply with the TCAS order or the controller order. Neither the SES regulations or any European instrument nor the FAB agreements try to or even provide a hint on how to solve the liability question of pilots. Surely one may expect inconsistency in Europe; obviously, due to the different tort law regimes that exist within the Union, different answers to this problematic relationship, with respect to liability, will be given.

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[374] However, in the US the controller's responsibilities during a TCAS RA are defined in FAA Order 7110.65. Whereby it has been made clear that when a pilot responds to an advice of the TCAS, the controller should not issue control instructions conflicting with the TCAS RA.
Retrieved from: U.S department of Transportation and Federal Aviation Administration, 'Introduction to TCAS II version 7' (n 367), p.34
[375] Eurocontrol Mode S and ACAS Programme (n 352), p.3
[376] Garcia-Chico (n 191), p.22
[377] Henk Geut, 'The pilot and the air traffic controller: division of responsibilities' (1988) 13 Air law 256, p. 257; Abeyratne, *Air navigation law* (n 133), p.74
[378] Diederiks-Verschoor (n 193), p.198; Erotokritou (n 146), p.1
[379] His/her responsibility is closely linked to the concept of good airmanship. See: Garcia-Chico (n 191), p.20
[380] du Perron (n 85), p.209
[381] Garcia-Chico (n 191), p.20
[382] Abeyratne, *Air navigation law* (n 133), p.75-76

By letting Member States and national courts decide, the Union legislators have opened a door to divergences and enormous inconsistencies. Even though one may argue that inconsistencies will be reduced by relying on the ICAO imposed on the pilots to follow the TCAS order, we still return to the previously enounced question: what will happen when there is a defect in the TCAS software? Who will be held liable then?

vii. Air navigation service providers (ANSP)

Air Navigation Service Providers is a broad term that encompasses various types of services. One of the main fields this article looks at is the Air Traffic Service (ATS). Under the heading of ATS, it is possible to find the main mandatory services of preventing accidents and the procedures to be followed in the case of a collision. ATS is subdivided into three main services, namely; Flight Information Service (FIS), Alerting Service (ALTS) and finally, Air Traffic Service (ATC).[383]

There are three types of Air Navigation Service Providers: first an Individual State can provide the service; the second type is the provision of the service throughout a joint institution, like the MUAC; and thirdly, a non-governmental entity, either corporations or private entities, acting on behalf of a State or group of States[384]. The provider is subject to national law and regulation for the performance of his ATS duties.[385] The tasks that can be delegated by the State are limited to specific operational tasks. Any sovereign function of ANS remains with the State.[386]

Similarly to the actors analyzed above, no general legal instrument, either European or international, can help to answer any question about the liability of ANSPs.[387] One

[383] Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.114-115; Cook (n 185), figure 1.1
[384] Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.113; van Antwerpen (n 37), p.13; Paul Stephen Dempsey, 'Liability for Air Navigation Services' (McGill University, 2011) <http://www.mcgill.ca/files/iasl/ASPL636-ANS-Liability.pdf> accessed 26 June 2014, slides 4-6
[385] Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.116
[386] Alias, E.02.13 (version 00.01.02) (n 157), p.67
[387] Simoncini, 'Governing air traffic management in the single European sky : the search for possible solutions to safety issues'(n 115), p.219

exception can be pinpointed: the Maastricht Upper Area Control (MUAC), which is under the supervision of Eurocontrol, and for which specific provisions on liability can be found.[388] Article 28 of the Chicago Convention only requires States to provide ATS within their airspace.[389] The Montreal Convention and its transposition at EU level, Regulation 889/2002, require unlimited liability only when an accident results in bodily injuries or death.[390] Yet, even with all these instruments, the substantially important questions are left to national law provisions, provision in bilateral agreement if applicable and general tort law without taking into account the specific nature of the risks.[391] The International Civil Aviation Organisation (ICAO) has observed that there is no real need for an international convention on the liability of traffic management agencies, or at least that is what can be deduced from its failure to create an international convention dealing with such liability issues.[392]

As long as the case only involves domestic parties there are no problems. The picture starts to become blurry when a cross-border dimension is involved. Such cases cannot be entirely resolved by applying only national law as the issue might be much more complex. Purely domestic flights are rare. For instance, a flight might be subject to both domestic and international law: for some passengers, the flight is domestic but for others it is part of a longer (international) trip.[393] Even if at first glance a case looks like a purely domestic problem, it may raise international issues and consequently, more complicated legal issues. The creation of the FABs will augment the number of cases with a cross-border dimension as the new system authorizes and favors the provision of ATM services by foreign ANSP.[394] As a direct result, the airline

[388] Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (n 262), p.3
[389] Chatzipanagiotis (n 124), p.326
[390] Article 3a Regulation 889/2002 refers to the Montreal Convention and the liability scheme applicable to it. For the development of the unlimited liability in the Montreal Convention please consult: Dempsey, 'International air cargo & baggage liability and the Tower of Babel' (n 305); George Leloudas, 'Multimodel Transport under the Warsaw and Montreal Convention Regimes: a Velvet Revolution?', in Baris Soyer and Andrew Tettenborn (eds), *Carriage of goods by sea, land and air : unimodal and multimodal transport in the 21st century* (p.77-110, Informa Law, 2013)
[391] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.51; Chatzipanagiotis (n 124), p.327; Peter Brooker, 'Reducing mid-air collision risk in controlled airspace: Lessons from hazardous incidents' (2005) 43 Safety Science 715, p.720
[392] Schwenk and Schwenk (n 161), p.147
[393] Harding (n 158), p.12
[394] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53

companies may have to adjust their insurance, as they will need higher coverage limits for accidents involving international elements.[395]

Thanks to the Chicago Convention Article 28, ANS has a sovereign status, meaning that if the State has not transposed the Convention into a national legal instrument, a natural person would not be able to rely on the Convention because no rights to claim damages flow from it.[396] Due to its sovereign nature, most national legal orders follow the approach that the State is primarily responsible. In most Member States the air navigation service function has been delegated to a public agency either fully or largely owned by the State.[397] The fact that the service is provided by an independent body does not change the primary consideration, i.e the State is still liable first, except when the provider is a private entity. The only provider that has been privatized in Europe is NATS, which is in charge of the UK air navigation service.[398][399] This means that NATS will be the only entity bearing liability, unless damages occurred due to some mistake on the part of the State.[400] Then the State will be liable for the damages it directly caused.[401] The ANS in the Benelux countries and part of Germany is, unsurprisingly, operated by a common agency, namely the Maastricht Upper Air Traffic Control Center (MUAC) which is under the control of Eurocontrol, which is primarily liable.[402]

Additionally, the Chicago Convention governs the relation between States but does not give a right to natural persons to sue an ATS.[403] Even if Article 4(2) of Regulation 549/2004 requires the Member States to establish an independent national supervisory authority from air navigation service providers, it does not extend the right of private

[395] Harding (n 158), p.12
[396] Chatzipanagiotis (n 124), p.327
[397] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53
[398] Due to the need of capital investment, NATS was changed from a wholly owned subsidiary of Civil Aviation Authority to a public-private partnership. See: Max Steuer, 'The partially private UK system for air traffic control' (2010) 16 Journal of Air Transport Management 26, p.26
[399] Nats, 'Our history' <http://www.nats.aero/about-us/our-history/> accessed 29 June 2014
[400] Dempsey, 'Liability for Air Navigation Services' (n 384), slide.7
[401] In case of insolvency of NATS the UK will be the ultimate responsible.
[402] Eurocontrol, 'Maastricht –UAC' <http://www.eurocontrol.int/content/maastricht-uac> accessed 25 April 2014
[403] Alias, E.02.13(version 00.00.01) (n 154), p.58

parties to file a claim against an ATS. Concretely, two different agencies will have to be created; one to govern the regulatory function and the other to deal with service provision function.[404]

The type of liability for service providers is based on fault-liability except in Switzerland where strict liability is used.[405] The liability of ANSPs towards airline companies is universally accepted to be delictual and not contractual in nature.[406][407] Additionally, the liability is unlimited and is normally borne by the State, except for NATS.[408] Of course, the State can then seek reimbursement from the provider.[409] This reimbursement will be based primarily on the provision of the agreements between States and their ANSP, as required by Recital 15 and section 7 of Annex 1 of Regulation 1035/2011. However, these arrangements are only of secondary value and may seek to redress the impact of damages paid by the taxpayers of that country. The secondary value of these agreements comes from the fact that FAB treaties and international law prevails, as the agreement between States and their ANSPs are considered contractual in nature. Even if the primary consideration is identical, namely that the State is liable, we have seen that the modalities and the ways States deals with such liability varies considerably.

It might be surprising that in the Regulations the only reference to liability is the requirement for ANSPs to be insured for the risks that may arise from their activities.[410] It is even more surprising that this requirement is to be found in Article 6 of the Service Provision Regulation, which enumerates the common requirements.

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[404] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53

[405] Schwenk and Schwenk (n 161), p.141; Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution'(n 261), p.36

[406] But for instance in the privatisation agreement of NATS, it is stipulated that NATS is not liable for losses of airline companies caused by air traffic control failures.
See: Software Forensics Centre, 'At last a silver lining around the troubled NATS Air Traffic Control System' (2002) Report TR 2002-01
<http://www.eis.mdx.ac.uk/research/SFC/Reports/TR2002-02.pdf>(accessed 5 July 2014)

[407] du Perron (n 85), p.205; van Antwerpen, *Cross-border provision of air navigation services* (n 160), p.220

[408] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53

[409]Chatzipanagiotis (n 124), p.343; Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53

[410] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.56

Article 6 should be read in conjunction with Article 7 which requires the ANSP to obtain a certificate from a Member State.[411] Paragraph 4 of Article 7 specifies that the certificate must contain a clause with the rights and obligations of the ANSP. Nevertheless, it is up to the Member State to decide if the ANSP is sufficiently covered. Additionally, Article 7 of the Annex 1 of the Common Requirements Regulation stipulates that the ANSP must be covered with respect to rights and obligations and that questions of liability should be dealt with. The liability issue is answered by using the applicable law.[412] Consequently, the applicable regime will be determined by the provisions of the agreement that governs the cross-border service on a case-by-case basis.[413]

Within a FAB, Article 8 (5) of Regulation 1070/2009 states that one or more Member States within that airspace block must designate one ANSP that will provide ANS exclusively within that geographical area.[414] Therefore, it is imperative to include liability provisions in the treaty on which the FAB will be based. Otherwise, the only country that will have to bear the responsibility for the collision will be where the accident occurred, making it nearly impossible for the State to recover damages from the ANS.[415] Just to give an example of the protection of ANSPs: Article 30.2 of the Treaty establishing the FABEC stipulates that 'No direct action may be brought against the effective air traffic service provider or its agents or any other person acting on its behalf.' In other words, the State may seek reimbursement from the ANSP after having compensated the victims. The victims, however, cannot directly file a claim against the ANSP. Nothing in the agreements gives the ANSPs the rights to claim damages that they pay to the State from a sub-contractor. This issue is either resolved through special clauses in the contract or by relying on national law.[416]

[411] Article 7(8) Service Provision Regulation, 550/2004. The principle of mutual recognition applies, therefore the certificate will be recognized throughout the Union.
[412] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.56
[413] Ibid, p.57
[414] The geographical area can encompass part of the territory of the Member States or them entirely
[415] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.56; Simoncini, 'Governing air traffic management in the single European sky: the search for possible solutions to safety issues'(n 115), p.223
[416] Alias, E.02.13(version 00.00.01) (n 154), p.67

One should not forget that within Europe, the main ANSP is Eurocontrol. As a result any victim of an airplane crash can start lawsuit against Eurocontrol, even if they are not EU citizens.[417] Nevertheless, with the FABs system and the opening of the market to all ANSPs, the role of Eurocontrol might diminish.

[417] Erotokritou (n 146), p.3

D. Problems encountered

i. Victims

The victim normally files a claim against the State in which the injury occurred, if the state follows the territorial state doctrine, or against the state responsible for the ANSP, if the state follows the provider state doctrine.[418] But, this is in theory. In practice, states may not rely on the doctrine of territorial State or the ANSP could be a private entity. Even though Eurocontrol advocates for the provider state doctrine, there is no consensus within the Union on which doctrine is prevailing. Therefore, if the agreement creating the FAB does not contain clear conflict of law rules, then the case may quickly become a nightmare. First of all, it would be complicated to determine in which forum the claimant needs to bring his lawsuit. Secondly, when the case has been filed with the relevant court, the judge will have to figure out which law is applicable. Clearly, filing a lawsuit will be burdensome for the victim and the length of the proceedings might be prolonged given that the court may not be the most appropriate forum to hear the case. Therefore, the principle of prompt, adequate and effective compensation is at stake.[419] Prompt compensation principle obliges the State to fully compensate the victims for the wrong it committed.[420]

It can be costly and time consuming to assign the authority of a country in front of a court with no certainty whatsoever that the person will receive compensation. Even if the cases are straight-forward, in some countries a consequential amount of time could lapse before any compensation is given to the victims or their relatives. For instance, more than 6 years passed before the relatives of victims from the Nantes collision received any damages. The documents that need to be produced as evidence, differ from country to country. Furthermore, one should keep in mind that those cases cost

[418] Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (n 262), p.13; Simoncini, 'Governing air traffic management in the single European sky : the search for possible solutions to safety issues'(n 115), p.224

[419] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.54

[420] For more information see: Frank G. Dawson and Burns H. Weston , '"Prompt, Adequate and Effective": A Universal Standard of Compensation?' (1962) 30 Fordham Law Review 727

million/billions of euro to the country. Therefore, some States are reticent about the cases.

The situation may be worse for bystanding civilians injured or killed because of an airplane accident, as seen in the Nantes collision. This explains why few lawsuits were filed by the relatives of the civilians killed by the accident.

Normally, because of the sovereign nature of ANS activities, all claims should be filed in the court of the State of occurrence and therefore forum shopping is limited. But as soon as an ANSP is involved, the case takes directly bigger proportions as claims against various defendants cannot be merged and need to be submitted to different forum, which can mean different claims in different countries.

The airline company- passenger relationship is well regulated at EU level. Furthermore, the ruling in the case *Peter Rehder v Air Baltic Corporation* makes it clear that the victims can sue an airline company in both the court of departure and arrival.

ii. States

A State is under the obligation to compensate victims even if the collision was due to a failure by a foreign ANS, but the accident occurred over the territory of that State. This specific case is submitted to customary international law for breach of the duties under Article 28 of Chicago Convention but above all to the national law of that State.[421] This might seem normal. However, the problem lies in the fact that if that State and the State which the foreign ANS is from are not parties to an agreement, then the State over which the accident occurred may not have any legal mechanism for the reimbursement of damages paid out to victims of an injury caused by the foreign ANS.[422] Instead, the taxpayers of that State will have to bear the final responsibility. The difficulties of a case like *Überlingen*, should be avoided.[423][424] Most of the time the agreements, which the cross-border service is based on, are drafted and concluded between ANS without States being involved.[425] These agreements are mostly of a technical nature and do not encompass any rules governing liability questions.[426]

As already mentioned above, according to Article 8 (5) of Regulation 550/2004 or Article 4(4) 1079/2009, within a FAB, a Contracting States can designate one service

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[421] Chatzipanagiotis (n 124), p.344; Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.54

[422] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.54

[423] In this case the plaintiff filed lawsuits against the U.S defendants in the United States, however due to the minimal connections the U.S court dismissed the case under the rule of *forum non conveniens*. The plaintiff then filed a lawsuit in Spain which ironically decided to apply Arizona and New Jersey law to the issues of liability and damages.
For more information see: Alan H. Collier and Nicholas A. Weiss, 'Choice of law & choice of forum in foreign air disaster litigation'
<http://www.fitzhunt.com/sites/default/files/news/Choice%20of%20Law%20and%20Choice%20of%20Forum%20in%20Foreign%20Air%20Disaster%20Litigation-Collier-Weiss.pdf> accessed 29 June 2014
Furthermore, the district court in Germany applied German law and found the German state liable. But even if it would have applied the Treaty, which was not signed, between Germany and Switzerland, the answer would be similar as Germany agreed to be liable for errors made by the Swiss air navigation service provider in German airspace. See: Niels van Antwerpen, 'Cross-border provision of air navigation services with specific reference to Europe: Safeguarding transparent lines of responsibility and liability' (PhD, Universiteit Leiden, 2007)

[424] Franklin (n 32), p.429; Vrbaski, 'Liability of Air Navigation Service Providers: Towards an International Solution' (n 262), p.14

[425] For instance see: Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.55; Aireon, 'Aireon signs agreement with NAV Portugal, another strategic air navigation service provider, for space-based ADS-B' (3 March 2014)
<http://www.aireon.com/NewsEvents/NewsReleases/NewsReleaseDetail?pid=45> accessed 29 June 2014

[426] See for instance: FABEC Implementation Phase Cooperation Agreement ANSP Annex F; Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.55

provider that will function as the exclusive ANS for the airspace over one or more States. If the FAB's treaty does not mention how responsibility is to be divided among the actors involved, only the country over which the accident occurred will have to pay. And then it will be nearly impossible for the State to recover damages from the ANS.[427] Furthermore, the foreign ANSP can be tempted to escape liability by refusing to be subject to foreign jurisdiction. This refusal would be based on the, direct or indirect, public status of the agency providing the services.[428]

On top of that, the SES Regulations make it even more complicated and tricky by giving the ANSP the possibility to delegate work to other certified service providers under Article 10 of Service Provision Regulation. A safeguard has been placed in Article 7 of the Common Requirements Regulation, however, which requires that the arrangement between the ANSPs contains a provision on the allocation of responsibilities. But, if this obligation is treated with the same zeal as in some of the FAB treaties then it will be of no use and national law will apply. If the contract is not well-drafted then we will (again) witness legal battles. Naturally, the 'main' ANSP will remain liable toward the Member State that appointed it, without taking into consideration the fact that power was delegated to another ANSP. Yet, the State will be the first to compensate and will be then able to claim damages from the wrongdoer.

As has been mentioned above, some authors have raised the argument that if the ANSP governing the airspace of the country is of the same nationality as the place of occurrence, then it will be considered a wholly internal situation[429]. There are two reasons to be cautious of such categorization. First of all, the questions of liability are ultimately dealt with by ICAO. Secondly, the Union has established a general framework of provisions covering the technical aspects of air traffic management. Yet, it is doubtful that the CJEU will consider these reasons as valid and take a different approach than the one it takes from free movement of goods and persons.

[427] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.56
[428] Ibid, p.54
[429] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.60

One may raise the argument that when States engage in a FAB co-operation, they would have to address also the liability case and it would be highly unusual for a State to accept a set of arrangements where its own service provider is at a disadvantage. We may agree and at the same time disagree with this statement; it is true that the whole FAB will not be serviced by one ANSP but rather cooperation among them. Therefore, there will be few changes in that regard from the existing system. For example, Article 12 of the agreement establishing the FABEC stipulates that there will be more than one provider. The cross-border cooperation is not a new concept in the field of ANSP; there are already the Maastricht and Copenhagen agreements, which are currently working without the point of wholly internal situation ever being raised. But at the same time, if the State seeks reimbursement from its own ANSP, then the situation cannot be regarded as European because it lacks a cross-border element. In such situations, the normal provisions apply, i.e national tort law.

It is true that the State cannot force an ANSP to supply another Member State with its services. Yet, there is a need for clear and concise agreements in which liability issues are included.

E. Liability in US

Air litigation has become more complicated with the technological evolution of the industry.[430] Today, airline travel is common and therefore, juries are more inclined to think that the cause of a collision was due to negligence.[431] Two federal agencies take care of airspace related problems, the FAA and the NTSB.[432] Lawsuits in the US can be brought in front of either state or federal courts. Therefore, the plaintiffs' lawyers will be able to pick the jurisdiction with potentially larger damages, or where punitive damages are available.[433] The fear of punitive damages plays a great role in the fast resolution of a case; the defendants will stipulate to liability in exchange for an agreement from the plaintiff to waive punitive damages. When liability is established and accepted by the wrongdoer, then the only remaining question is the amount of compensation. As a result, air collision cases often can be resolved quickly.[434] Additionally, when the NTSB investigates the reasons for an accident, the main actors, e.g., the airline companies, manufacturer, and controllers, are extensively involved in the process of fact finding.[435] Product liability is dealt at state level but federal law can also play a role.[436][437]

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[430] Jonesday, 'Aviation Product Liability Litigation' <http://www.jonesday.com/files/Publication/7476e01e-34ca-4e33-afb8-03d127c456a4/Presentation/PublicationAttachment/83625db2-8042-48bd-ab37-3dba1f01d4ac/Aviation_Transportation_Product_Liability_Litigation.pdf> accessed 25 April 2014, p.1

[431] Liam P Sarsfield et all, *Safety in the Skies : Personnel and Parties in the NTSB Aviation Accident Investigations : Master Volume* (Rand Publisher, 2000), p.83

[432] 49 U.S. Code § 1132 - Civil aircraft accident investigations.
For more information see: Federal Aviation Administation, <http://www.faa.gov/> accessed 26 April 2014; National Transportation Safety Board, <https://www.ntsb.gov/> accessed 26 April 2014; Robert Longley, 'About the Federal Aviation Administration (FAA), Responsible for the safety of aviation' <http://usgovinfo.about.com/od/technologyandresearch/a/aboutfaa.htm> accessed 26 April 2014

[433] Liam P Sarsfield et all (n 431), p.83; Brice (n 262), p.31

[434] Liam P Sarsfield et all (n 431), p.88

[435] Ibid, p.87

[436] Product liability in the US is also strict and absolute as held in *Greenman v. Yuba Power Products Inc*., 59 Cal. 2d 57, 377 P2d 897, 27 Cal. Reptr. 697 (1963)
Now the US has a regulation of product liability: Model Uniform Product Liability Act but this act is not directly relevant to aviation. See: Diederiks-Verschoor (n 193), p.192-193

[437] J. Denny Shupe and Steven K. Armstrong, 'Recent Developments In Aviation Products Liability', p.16.
For more information see: Shupe J D and Lamonaca V, 'Product liability litigation- past, present and into the 21st century', in Barnes W. McCormick and Myron P. Papadakis (eds), *Aircraft Accident Reconstruction & Litigation* (Chapter 23, 4th ed, Lawyers & Judges Publishing Company, Inc, 2011)

Of course, international conventions are also applicable in the US.[438] Consequently, the State will still be liable under customary international law for breach of duties under the Chicago Convention. Nevertheless, it is the United States as a whole that is a signatory member to the Convention, rather than the individual States. Furthermore, Annex 11 of the Convention dictates that it is the Signatory States who decide for which part of the airspace ATS must be provided, as well as which organisation will provide that service. In case of an' internal' accident, the Convention is not applicable. As a result, liability is mostly dealt with as an internal matter, relying on relatively similar tort rules and one investigation agency. In such situations, the airline company will usually be the first to bear responsibility. Furthermore, it is common ground in the US to file a lawsuit against multiple actors; air collisions do not derogate from this rule.[439]

The possibility of combining claims filed in different states exists in the US but not in Europe. The resolution of aviation claims without a lawyer is unlikely, partly because the litigation is costly and time-consuming.[440] Generally, claims are settled after negotiation between lawyers for the plaintiffs and insurance companies.[441] Generally, the insurance coverage is high in order to anticipate damages incurred from a collision.[442] However, most of the agreements establishing FAB contain a clause on litigation. Therefore it seems that the option is left open in Europe.

Usually, the first named defendant is the airline company, then the aircraft manufacturer, air traffic controllers and some government agencies.[443] The job of air traffic controller is regulated by federal law since the Federal Aviation Administration (FAA) employs all controllers and they must pass through a federal civil-service

[438] Jonesday (n 430), p.1
[439] Paul A Peterson, 'Liability for Ground Damage from Crashes or Forced Landings of Aircraft' (1955) 43 California Law Review 309, p.309
[440] Liam P Sarsfield et all (n 431), p.84
[441] Ibid, p.86
[442] Ibid, p.88
[443] For instance in the case *re Paris air crash of March 3, 1974*, the defendants were the manufacturers aircraft, the airline and the US Government. See also: Michael Bogdan, 'Aircraft accidents in the conflict of law', in Académie de droit international de La Hay, *Recueil des Cours 1988* (Kluwer Academic Publisher, 1988); Paul B Larsen, Joseph C. Sweeney and John E. Gillick, *Aviation law : cases, laws and related sources* (Transnational Publishers, 2006); Liam P Sarsfield et all (n 431), p.84-85

system.[444] Lastly, in the US, the minimum altitude level is prescribed by federal law.[445] Consequently, liability is dealt with differently in the US and Europe because states are not likely to be liable and trials always include multiple agents and agencies.

[444] Before 1946, the controller was the only one to bear liability, if the State did not expressly accept to be sued. The State applied the doctrine 'the King can do no wrong'.
See: Kevin N. Courtois, 'Standards and practice: the judieiary's role in promoting safety in the air traffic control system' (1990) 55 Journal of Air Law & Cornmerce. 1117, p.1120-1121; Freudenrich (n 111), p.4; Vanessa Warriner, 'La responsabilité des controleurs aériens dans les systèmes Américain et Français'(LL.M, Institut de droit aérien et spatial, McGill University, 2000), p.21
[445] Peterson (n 439), p.310

F. Intermediate conclusion

To sum up, a state will be liable but can file a suit against the person, legal and natural, whose failure has led to the accident. If it is a clear-cut case, the state will compensate for the damages. One may ask why an entire master thesis on this topic is needed, given the apparently easy and straightforward answer. The reason is that complications arise with regard to how to deal with internal liability.[446] Furthermore, we might be witnessing, now that we will notice a change from national based rules to supranational based rules, the risks that Member States reject the fault on one another is greater. Claimants and states may face difficulties with respect to liability when a cross-border dimension is involved. Although such fights also occurred before the creation of FABs, the fact that they are no longer based on national borders may create more problems within an FAB itself in the case of an accident, as it will be more complicated to determine who or what element caused the accident.

By requiring the Member States to closely cooperate inside of a FAB, the Union may have opened the door to divergence within Europe. Furthermore, except in the case of Sweden and Finland where an agreement exists for cooperation and a declaration that the NEFAB and Danish-Swedish FAB will cooperate, there are no instruments dealing with this aspect of the problem. It is in human nature that when you regroup people together and ask them to closely cooperate together they will mostly not look at what their neighbor is doing. If an accident occurs on the border of two FABs, the question that was already difficult without the FAB, would start to become impossible to answer. To explain, we will use the following hypothetical example; a plane under Irish flag, flying above the Alps, leaving the control of French ANS and entering the control of Spanish ANS, crashes in proximity of the border. It is obvious that the pilot made no mistakes, but the plane is not well-maintained even though the company had received a certification from Ireland. The lack of clear communication between the French and Spanish ANSs leads to the accident. However, if the plane would have been well-maintained, fewer people would have died. The question is who is liable? Probably, Spain might say it is not liable because

[446] Chatzipanagiotis (n 124), p.344

the French ANS has provided incorrect information. France might say it was the Spanish that did not lead the plane well enough and therefore it crashed on French territory causing the death of x number of persons. Ireland might say it was unaware that the plane did not meet the required safety requirements. This would result in judicial arguments between countries. Although, this scenario could occur before FABs were created, the fact that FABs are no longer based on national borders may create more problems within the FAB itself in case of accident; it will be more complicated to decide who or what elements amount to the accident. Therefore, adding a layer of difficulty rather than suppressing one.

Generally, when a collision occurs, passengers die. As a result, in the US and in Europe, one of the subsequent lawsuits is against the wrongdoer for wrongful death or manslaughter but less often for personal injuries.[447] In the United States, they also encounter the same problem as in Europe in a sense: it is difficult to establish with certainty which entity was at fault and who to sue. Therefore, in the US, lawsuits often contain multiple defendants, namely the manufacturer, operators and regulators of the aircraft.[448] Furthermore, class actions and multi district litigations are available. This would never be possible in Europe. Multi-defendants trials are possible, Article 6(1) Brussels I. But, class actions are not yet available.[449]

The Commission wishes to imitate the system implemented in the US where airspace is divided efficiency and seems to work well. However, the US model cannot be applied to the European Union for one simple reason: the US as a whole is a signatory country to the Chicago Convention, rather than by individual states. Therefore, as long as the US fulfills its obligation, its internal division is of no real importance to its international obligations. In contrast, in Europe, each Member State is signatory state and therefore individually bound the Convention's obligations. Additionally, in the US, a plaintiff can choose whether to bring his claim before a state

[447] Liam P Sarsfield et all (n 431), p.83
[448] James A. R. Nafziger, 'Choice of Law in Air Disaster Cases: Complex Litigation Rules and the Common Law' (1994) 54 Louisiana Law Review 1001; Liam P Sarsfield et all (n 431), p.83
[449] Ludger Giesberts and Andreas Tiedge, 'Is US-style class action litigation coming to the EU? European Commission calls for collective redress mechanisms in EU national laws – 8 points to note' (10 December 2013) <http://www.dlapiper.com/en/italy/insights/publications/2013/12/is-usstyle-class-action-litigation-coming-to-the /> accessed 29 June 2014

or federal court. This system allows plaintiffs' lawyers to forum shop for the court that is likely to award the largest amount of compensatory damages or punitive damages. Due to the fear of a jury trial and the vast amount of damages a jury may award, the airline companies and aircraft manufacturers have a bigger incentive to reduce risks than do the entities in Europe.

3. Recommendations and conclusion

As has been highlighted in this thesis, the first party to bear responsibility in the event of an accident is the State of occurrence. Under the SES framework, this has not changed. However, due to the complexity of the system introduced, the resolution of a case will be much more complicated and the line between the actors involved will be even more blurred.[450] However, it should be kept in mind that it is impossible to isolate the liability of one actor from the liability of the rest of the involved actors.[451] As long as the Union is convinced that the problem of allocation of liability should not be dealt with at European level, we can only propose remedies which will ease the resolution of a case but certainly not resolve the problem.

The system and delineation imagined by the Commission might not be the most apt to address entirely the problem of inefficiency. Indeed, the highest density region of Europe has been divided into four different FABs. In other words, Austria, Belgium, France, Germany, Italy, Luxembourg, The Netherlands, Switzerland and the UK are not in the same FAB even if the most dense air corridor is above their territories. Even Eurocontrol stated that it was unlikely that the division as it stands would be 'operationally optimal.'[452]

But beyond this problem of division, another major problem is that the Regulations leave a considerable room for maneuvering by the Member States[453], which can lead to disparities within Europe. But the main problem the SES proposal is facing is that no one really understands its advantages or values it as it should, as is exemplified by the Member States' reluctance to adopt the SES. Furthermore, when reading the first regulations it seems that the Union tried to push an idea forward but without thinking through the details and side effects of such legislation. This is also highlighted by the fact that traffic controllers were not considered during the drafting the legislation, or at least that the legislator forgot to look at the proposition's side effects, and only valued

[450] Schubert,'The technical defragmentation of air navigation services' (n 116), p.63
[451] Guido Rinaldi Baccelli, 'L'unification internationale du droit privé aérien: Perspectives en matière de responsabilité des transporteurs, des exploitants des aéroports et des services de contrôle de la circulation aérienne' (1983) 8 Annals of Air and Space Law 3, p.3
[452] Eurocontrol, FAB Evaluation (n 31), p.167; Lawless (n 20), p.78
[453] Franklin (n 32), p.425

the potential profits. That is why the French traffic controllers went on strike; they fear the adverse consequences on security that could result from the SES, but furthermore they fear losing their advantages, such as work benefits.

The concept behind the SES is amazing and can bring the necessary changes the European airspace is craving for, at least economically. But legally speaking, at least with regard to the liability question, no real change will occur. Quite the contrary, an additional layer of fragmentation may result. As it now stands, the European legal framework designed for the SES does not provide for any form of liability. Therefore, the resolution of a case will rely on national law and international conventions. Even if the Commission considered the issue but preferred to leave the States' room to decide upon the matter, it would not change the fact that this would lead to divergent approaches towards liability within Europe.

First, when people are asked to closely cooperate together, they tend to focus on their group only and not on what their neighbors are doing. If we extrapolate from this notion, we can easily arrive at the conclusion that there will be nine bubbles that will emerge in Europe, one for each FAB, each with different criteria for liability. Of course, every bubble will only care about its well-being and will implement its ideas to that end. Therefore, the result might be a bubble effect, similar to that which characterizes Brussels' institutions. The Commission has maybe made a mistake by requiring close cooperation within a FAB, leading to individualistic behaviour in each FABs.[454]

Second, the level of liability will differ greatly for people in the same position. To this, the counter argument is that we are already facing this problem with tort law. This will not be denied but where, in my opinion, the problem lies, is that some ANSP providing services in a foreign State will be subject to unclear and convoluted agreement, which will undermine legal certainty and disincentive for companies to do indeed provide services in a foreign state. If the inter-state agreements were clear, precise and concise, as some already are, the service provider would know where it

[454] Lawless (n 20), p.78

stands before entering into an agreement to provide services on the territory of another State. Furthermore, due to the differences in the State agreements, a ruling by the CJEU may only be applicable to a certain FAB, not to the Union in general since the status of the intra-state agreements is unclear. Additionally, it is to be assumed that in case of dispute within an FAB, the CJEU will have jurisdiction and will render a judgment. However, this is only an assumption flowing from the normal application of European law. The judgments might be different in each FAB. Moreover, several non-European states are involved in the SES, which begs the question whether they would accept CJEU rulings? If not, how would we resolve a case when the parties are not agreeing on the facts?

Finally, the competition between the FABs will be higher. Since most major airports are within the same block, their objective may be quite different from that of the other FABs.

In my opinion, the biggest mistake the Union is making is trying to create a system similar to the US system by using FABs. This creates at least two problems: the US is a nation and the judicial procedure.

Firstly, the US as a nation is under the obligations of the international conventions. So long as the nation complies as a whole, what the individual states do is immaterial. Therefore, the US has much more room of manoeuvre: the Chicago Convention requires each Contracting States to provide ANS, if the entire US has one, it meets its obligation; the US need not have 50 ANS for each of the 50 states. In contrast, every Member States of the EU is a Contracting States to the Chicago Convention, so each Member State must have an ANS to be in compliance. As a result the only possibility for Member States is to cooperate more but this would probably not solve the problem on the long term. Perhaps, the Union could sign the Convention, but that does not seem to be on the agenda nor very realistic.

Secondly, in the US, there is a possibility of going to Federal Courts. This possibility is totally excluded in the Union since the Union never wanted to be a federation. One may argue that we do not need a federal court to deal with airspace

collisions. Well that would be a mistaken assumption! Not every FAB agreement provides a clear answer to the choice of forum or choice of law question. According to international law, the place of occurrence has jurisdiction, but nothing is written with regard to the other states. Nor is it certain that state immunity will not hinder the smooth resolution of the case. Even though, within the Union that problem was never raised, one should keep in mind that non-European States are also involved in the SES. Of course, some of the FABs encompass States with similar legal systems; therefore in the event of a collision, solving the problem may not be too difficult. This is not the case in every FAB. For example, within the FABEC three different types of liability exist. Although it is clear that the State of occurrence has to pay and then it can file a claim against the wrongdoer, if the penalty imposed in the first State is higher or lower, then problems may arise. Certainly, when the penalties are higher, the State of occurrence will probably not get full compensation and then it will be the taxpayers of that State who will have to bear part of the consequences of the crash.

Thirdly, in the US, there is the possibility of starting multi-district proceedings, which groups all the claims against the same parties in one multidistrict court. That simplifies the investigations and renders judgment more quickly, therefore compensating the victim faster as well. In Europe it would be impossible to have such a mechanism. However, since the state of occurrence is under the obligation to compensate, one may argue that it is not a real problem. The place of occurrence will have to pay even when it has done nothing wrong; it can then sue other parties, but this generally results in lengthy proceedings.

Finally, the US has extensive discovery in civil cases, which can help uncover the reasons for a collision. This possibility is not available in most European countries and may lead to problems: when it is unclear who the wrongdoer is, it will be difficult to attribute liability. Furthermore, certain countries may argue that the discovery was not extensive enough or the evidence not taken in accordance with national practice and therefore declare it inadmissible. The only possible solution would be to create a committee at the EU level to supervise the collection of evidence and assist general in Member State cooperation.

It is indisputable that the inefficiency of the European airspace is costly for airlines. Nor is it disputed that this situation should be changed. To this point, it is again interesting to compare the Union with the US. In the US, the cost of traffic control is lower than in the EU. However, there are limits to this comparison. For instance, in the EU, labor law is different than in the US, and gives more protection to employees. As a result, employers have to guarantee certain rights that may raise costs. And there are fewer accidents in Europe than in the US, where the market is similar to the one the Union wants to introduce.

The above critiques lead us directly to the critical part where changes should occur. As we have seen in the section dedicated to inter-state agreements and as I have advocated, there is a need for provisions regarding liability in the treaties establishing the FABs. An even better solution would be for the Union to stipulate which points should be mandatory in all such treaties, which would help mitigate the enormous disparities that currently exist between the agreements. The only similarity is the final outcome that the State of occurrence will be the first to bear responsibility, since this obligation flows from international law. The idea of the Union dictating to the Member States what to do will most certainly be rejected by the Member States and viewed as a threat to their sovereignty. Knowing who is liable would be helpful for the victims and other actors involved. It is surely questionable if the Union enters into more detailed regulation of secondary liability arrangements and may be against the principle of freedom of agreements and subsidiarity. Nevertheless, it is desirable that the Union at least requires all States to include a liability provision and choice of forum rule in their agreements.

An alternative solution would be to refer any dispute to the International Court of air and space arbitration. The costs of litigation are low and speedy interim decisions are available when necessary. But, since it has been created no cases have been referred to it.[455] However, this can change as in most of the FAB's agreements an

[455] Géraldine Meishan Goh, *Dispute settlement in international space law a multi-door courthouse for outer space* (Marinus Nijhoff Publishers, 2007), p.74

arbitration clause is included. With regard to private parties it seems rather unlikely that they will use this means.

Furthermore, it is indispensable that all agreements between FABs are concluded, as is already the case between Finland and Sweden.[456] These agreements should encompass provisions on liability, as the worst case scenario would be if an accident occurred when a flight is in between two FABs, or leaving the control of one for the control of another. In such a scenario, it will be necessary to establish who was at fault and who will bear liability. Inter-FABs agreements will render the resolution of a case faster and easier if there are provisions dealing with the matter. Furthermore, providers will know the sanctions they may face and will enhance legal certainty. In order to avoid, the above-mentioned, bubble effect it is of crucial importance to establish cooperation among FABs as well.

In order to ameliorate the current framework, it is important to make a clear distinction between air traffic services exclusively under national sovereignty versus those in which a cross border element is involved. As was illustrated in this dissertation, a purely internal situation is rare or perhaps nonexistent as usually, at least one passenger will be a foreigner, making the case international as well as domestic. Nevertheless, it would not be problematic if the SES does not deal with those cases because international conventions can solve it. Thus, a clear definition of what is regarded as a cross-border element is needed. Is it the fact that the plane is operating between two countries or could it be a citizen of State A on a domestic flight within State B? If it is the latter, then how do we solve it? The resolution of such a case will lead to reverse discrimination. Even though this is accepted by the CJEU, it might seem unfair. Additionally, that means that the victim will have to file his/ her claim in the place of occurrence and may have to follow the case in a foreign language because the case will be purely domestic containing a foreign element. Then which law will be applicable? There are still many questions without clear answers.

[456] Murto, LSSIP Year 2011 Finland (n 281), p.5

A better approach to the problem may be to not change the entire legislation but rather, to replace some theories with renewed ideas that better reflect the current reality. As has been highlighted earlier, the doctrine used in the agreements establishing the FABs is the territorial state doctrine, which means that the State of occurrence is the one primarily liable. This theory was totally appropriate in earlier times when national ANSPs were providing services. However, with the current reality, it might create an unfair outcome: the State of occurrence may have delegated power over that part of its airspace to a foreign ANSP and therefore did nothing wrong. Additionally, this approach is not totally adequate and in line with the cornerstone idea of the SES which is: to eliminate boundaries.[457] A better approach would be to follow a doctrine holding the ANSP liable; in other words, to directly hold the wrongdoer liable. Article 14 of the draft model State Level FAB agreement proposed by Eurocontrol is based on that concept. The SES allows a Member State to directly designate a foreign ANSP, therefore changing the theory of liability would not contradict the legal text of the SES.

But, this theory also has some defects; the ANSP could be sued and judged under a laws different from its own, as the habitants of the State of occurrence might suffer from damages caused by the collision and want to sue the ANSP in their own courts. Additionally, if a Member State designates a foreign ANSP, then the governing law for liability matters will be the law of the State designating the ANSP. This is also true for the model FAB agreement, the choice of jurisdiction and law is clearly expressed; the one of the state where the damages occurred. Furthermore, that model agreement allows the State of occurrence to sue the ANSP in order to recover any compensation incurred by the State resulting from damages caused by the negligence of the ANSP.[458] One could argue, however that these risks are an inherent part of the provision of services in a different state, and therefore, the ANSP should be ready to bear such responsibilities. If a Member State designates a foreign ANSP, a possibility under the SES regulations, then the governing law for liability matters will be the law of the State designating the ANSP, and ultimately leading to problems. It might be

[457] Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.135
[458] Article 14.3 of the model FAB agreement

wise to try negotiation first in those cases. First of all, it is difficult to change national law in order to include all the possible consequences that the designation of foreign ANSP could have.[459] Therefore it is of great importance that the Intra-government agreements encompass this issue.

Another potential solution is to create a European fund for victims. The fund would work as follows: when an accident occurs, the fund will compensate the victims and then after a genuine investigation, the wrongdoer(s) would reimburse the fund. Therefore avoiding lengthy proceedings in courts, as the victims would be precluded to bring a claim through normal channels of litigation. The fund would be alimented by all the actors involved and augmented by the Member States.[460]As a result, Member States will show solidarity and no longer bear the costs of accident. Indeed, instead of the State of occurrence, which might not be at fault but currently must compensate the victims, under this system, the fund would be the primary payer. Using the fund will then avoid the problem of taxpayers from one country paying for the wrongdoing of a foreign state agency. With this idea, there is no need to change liability theories, but merely substitutes an external actor as the first to compensate. Since the fund will be purely European, the investigation might not be biased. It will be in the interest of all States involved to help because part of their money is in the fund.

However, one could argue against this idea in that the fund may not be used much and the money could be better used for other projects. This is undeniable but it is hard to imagine that a crash occurs over the territory of your country and that your tax money is used to compensate the victims even if it is clear that your country has done nothing wrong. Would you like it? Or would you prefer that victims are compensated by a special fund in which 28 countries have put money in? Instead of one country

[459] Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.119

[460] A fund was created, by Germany, Switzerland and Skyguide, for the victims in the Überlingen mid-air collision. See: Eidgenössisches Finanzdepartement EFD, 'Überlingen: Verlauf und Stand der Verfahren zu Schadenersatzund Genugtuungsforderungen' (2008) <http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCsQFjAB&url=http%3A%2F%2Fwww.efd.admin.ch%2Fdokumentation%2F02288%2F02485%2F02507%2Findex.html%3Flang%3Dde%26download%3DNHzLpZeg7t%2Clnp6I0NTU042l2Z6ln1acy4Zn4Z2qZpnO2Yuq2Z6gpJCDe4N4fmym162epYbg2c_JjKbNoKSn6A--&ei=eKS6U4_-OeSm0AWzjIHYCw&usg=AFQjCNE9-QLv_DWBS_COXg-XaQudq60DbQ&sig2=zVqBgiNBqJLWSMgkqXECsw&bvm=bv.70138588,d.bGE> accessed 29 June 2014

bearing the millions of euro losses, it will be millions divided by 28 and then reimbursed by the wrongdoers.

To establish a single Air Traffic Control Center per Member State might be problematic if the system breaks down, as happened in the UK in December 2013, which paralyzed a major part of UK airports.[461] The problem in such a system is that there are hardly any alternative ways to function in the event of a system break down. When there are different control centers, the planes can be sent to different airports. The idea of a unique center is interesting and will definitely enhance efficiency. However, there should be an 'emergency' system that can operate during a break down of the regular system.

Regarding the resolution of cases, it might be wise to create a panel of experts to help the CJEU. Creating a special court for the SES would not be feasible or practical for at least two reasons: first, air collisions are rare in Europe, and secondly, it will be way too costly. One thing is clear, however: the CJEU will encounter problems if it has to deal with a case of that kind. Already, experts in aviation law disagree with one another and are not entirely sure how to resolve certain issues that may arise; it would be unrealistic to believe that the judges in the CJEU, with their general knowledge, are the best equipped to solve cases encompassing lots of specificities.

These difficulties will be compounded by the differences in the FAB agreements. As a result, it might be that a ruling by the CJEU will only be applicable to a certain FAB or FABs and not to the Union in general. Furthermore, it is to be assumed that in case of dispute within a FAB, the CJEU will have jurisdiction and will render a judgment. This judgment might be different in each FAB.

In order to resolve the knowledge problem, there were proposals for a European aviation court, which would exclusively deal with aviation-related cases. This court

[461] Sky news, 'Air traffic control problem delays UK flights' <http://news.sky.com/story/1179070/air-traffic-control-problem-delays-uk-flights> accessed 26 April 2014

would be composed of experts, one for every specific field.[462] Such a court would bring legal certainty and predictability.[463] Furthermore, this court would be able to set common standards.[464] Concurrently, the same problems exist as for the proposed special panel within the CJEU: it will be costly and hopefully, not often needed.

A more rational recommendation would be to allow Member States in a same FAB to create a 'committee' to handle collisions. The committee would be composed of one representative from each of the states involved in the FAB and its main role would be to facilitate the distribution of liability. Furthermore, the committee could be composed of experts, or be able to hire experts to assist it. Consequently, the resolution of a case could be easier, as it would not be in the formal context of a court room but rather a mediation/negotiation style. One should never forget that investigations in such cases can be lengthy and costly. Furthermore, a (rather unwilling) Member State may decide to cooperate with the investigation as little as possible. Most of the treaties already provide for a committee to deal with investigations, but this committee could be involved in the negotiation and the resolution of the case. Without the fear of punitive damages as exists in the US, a court case will be less efficient in Europe.

It is difficult to change national law in order to include all of the possible consequences that the designation of foreign ANSP could have.[465] Therefore it is of great importance that the Inter-government agreements encompass this issue. What would have enhanced cooperation and efficiency, would have been the possibility for Member States inside of a same FAB to jointly designate one ANSP for the whole block. Then each of the states would have an agency under the orders of the main ANSP. This model would bring EU airspace closer to the US model in a sense, with controllers dealing with a specific sector. However, this would conflict with their obligations under the Chicago Convention. Although article 28 does not explicitly

[462] Michaelides-Mateou and Mateou (n 131), p.149; Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53; Schwenk and Schwenk (n161), p.141
[463] Michaelides-Mateou and Mateou (n 131), p.149
[464] Schubert, 'The Liability of Air Navigation Services Providers: Some Lessons from the Single European Sky' (n 253), p.53; Schwenk and Schwenk (n 161), p.141; Michaelides-Mateou and Mateou (n 131), p.149
[465] Schubert, 'Legal Aspects of Cross-Border Service Provision in the Single European Sky' (n 17), p.119

prohibit States from entering into agreements with other States or delegating control over part of their airspace, States will still ultimately be liable under Chicago Convention. One may argue that the Member States do not have a great incentive to delegate all their control to one single agency. One example of the delegation of part of their airspace is the MUAC, however in this case, Article 11(3) of the Maastricht Agreement dictates that it is Eurocontrol that bears direct responsibility if something goes wrong and Eurocontrol was at fault.

It can be concluded that the use of a Eurocontrol type of agency can be of great help in solving part of the problem because it is not linked to a national jurisdiction and is regarded by ICAO as an international agency.[466] Therefore, there is less chance of conflict between international conventions and SES. Nonetheless, it is not clear if Eurocontrol will be directly liable, or if the State of occurrence will have to pay first and then file a claim against the agency. It seems that the option taken is that Eurocontrol will be directly liable for any fault but that it has a right of recourse against a contracting state if the latter has misbehaved, ex article 11(3) Maastricht Agreement.

Another problem might arise, namely, the SES does not harmonize national law which regulates the States' airspace. Therefore, we may witness huge disparities between Member States. Therefore, if a foreign service provider is designated to control part of the airspace of another State, it will have to comply with two sets of rules and procedures. Although it is common practice for Member States to follow ICAO procedure, there is still room for maneuvering by the States. Consequently, one may wonder if the concept of dual burden and its prohibition under EU law would not be applicable in this situation. It will be hard for a State that delegates its power to control and supervise the foreign ANSP. Therefore, it is unclear which type of procedure will be used unless an agreement stipulates all the requirements and procedures that will be applicable. This leaves the door open to the question, is the harmonization foreseen by the SES adequate or should it be lower or more?

[466] van Antwerpen (n 37), p. 13

The Single European Sky is one of the greatest ideas of the Union. First, it will transpose the concept of the internal market to the sky, with some differences. It is a fact that the opening of the transport market should have been done earlier, which may have prevented Member States from being so protective with their airspace market. However, we can only change the future. With the current situation, the SES is the most suitable instrument to reduce delays and increase efficiency. The only flaw of the regulation is its lack of clarity with regard to liability. The position taken by the Commission is understandable but its overly lenient approach is leading to a different type of fragmentation within Europe, namely, a risk of bubble effect. Although it seems like a minor detail, it is imperative that some changes occur otherwise the first accident that happens will lead to catastrophically complicated cases and consequences for the taxpayers of the country in which the accident occurs.

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Annex 1

	FABEC	South West	UK-Ireland	Danish-Swedish	BLUE MED	Baltic	FAB CE	Danube	NEFAB
Specific article for liability	Article 30	Article 27	No	No	Article 25	Article 27	No	No	Article 27
Choice of jurisdiction in the article	Yes Article 30.5	No	No	No	Yes Article 25.5	Yes Article 27.4	No	No	Yes Article 27.5
Choice of law in the article	Yes Article 30.5	Yes Article 27.3	No	No	Yes Article 25.5	Yes Article 27.4	No	No	Yes Article 27.5
Who is primarily liable	State of occurrence	State of occurrence	NATS	According to international law principle: the State of occurrence	State of occurrence	State of occurrence	According to international law principle: the State of occurrence	According to international law principle: the State of occurrence	State of occurrence
Cost sharing	Yes the State of occurrence and the State of the ANSP can agree to share the costs. Article 30.8	Not stated	Not stated	/	Yes the State of occurrence and the State of the ANSP can agree to share the costs. Article 25.9	Yes the State of occurrence and the State of the ANSP can agree to share the costs. Article 27.6	/	/	Not stated
Right of recourse of the State	Yes against ANSP Article 30.6 and against any other person or operational entity, Article 30.9	Yes against another State and ANSP	Not stated	/	Yes against ANSP Article 25.6 and against any other person or operational entity, Article 25.10	Yes against ANSP Article 27.5 and against any other natural or legal person, Article 30.7	/	/	Yes against another State and ANSP
Dispute concerning the reimbursement by the ANSP to the State	Arbitration with the State of the ANSP. Article 30.7	Not stated	Not stated	/	Arbitration with the State of the ANSP. Article 25.8	Not stated	/	/	Not stated
Right of recourse of the ANSP for the negligence of the State	Not stated	Not stated	Not stated	/	/	Not stated	/	/	Article 27.4

Last resort agreement	Yes Article 30.3 in conjunction with 30.4	Not stated	Not stated	/	Yes Article 25.3 in conjunction with 25.4	Yes Article 27.2 in conjunction with 27.3	/	/	Not stated