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Aircraft leasing contracts and insurance coverage in the Russia-Ukraine Conflict: the exclusive jurisdiction of English Courts in the case of Zephyrus Aviation vs. Fidelis Underwriting

by Carla Bonacci* & Gilda Caso**

Introduction

In a recent decision, the High Court of Justice of the United Kingdom [1] asserted its jurisdiction over proceedings concerning the loss of aircraft leased by Western lessors to Russian airlines, despite contractual clauses in the insurance policies granting exclusive jurisdiction to Russian Courts.

The judgment, delivered in the case of *Zephyrus Aviation vs. Fidelis Underwriting* [2], represents a ground-breaking decision compared to the traditional stance of English Courts, which typically give decisive importance to exclusive jurisdiction clauses in favour of foreign courts and consequently suspend concurrent proceedings concerning those contracts initiated in the UK.

The High Court based its decision on an analytical assessment of the circumstances of the case and on the consideration that English Courts enjoy a margin of discretion regarding the suspension of proceedings. Therefore, if parties can prove the existence of *valid reasons*, English jurisdiction can be established despite contractual clauses granting exclusive jurisdiction to a different country and requests for suspension of the proceedings can be legitimately rejected.

1. Factual and Procedural Background

The *Zephyrus Aviation vs. Fidelis Underwriting* case is part of a series of disputes concerning the aviation market that started following the escalation of the Russia-Ukraine conflict in February 2022. The disputes involve as plaintiffs the aircraft owners/lessors who leased aircraft to Russian airlines (lessees). Those aircrafts are now stranded in Russia, despite the notifications of contractual termination notices, due to the Western sanctions on Russia.

In the case at hand, the plaintiff is Zephyrus Aviation, the owner and lessor of aircraft leased to Russian lessees. Specifically, Zephyrus' leasing contracts required Russian lessees to insure the aircraft against damage and destruction and against damages resulting from armed conflicts (via the so-called *Hull All Risks* and *Hull War and Allied Perils Risks* policies). Additionally, if the insurance policy was taken out outside the US, European, or English market, Zephyrus' leases required the reinsurance of risks with Western reinsurers recognized in such markets or, in any case, with internationally renowned reinsurers approved by the lessor, such as Fidelis Underwriting. Moreover, the reinsurance was to include a clause known as a *cut-through clause*, which provides for direct compensation from the reinsurer to the damaged party, allowing a party that does not have a direct contractual link with the reinsurer to exercise rights against it.

Following the onset of the conflict, due to the impossibility of reclaiming the aircraft, these *cut-through* clauses allowed Zephyrus to act against Russian insurers and concurrently bring a direct action before the English Courts against Fidelis Underwriting, as the Western reinsurer of the aircraft.

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1 High Court of Justice, Business and Property Courts of England and Wales, King's Bench Division, Commercial Court.

2 Zephyrus Capital Aviation Partners 1D Ltd & Ors vs. Fidelis Underwriting Ltd & Ors (Re: Russian Aircraft Operator Policy Claims (Jurisdiction Applications)) [2024] EWHC 734 (Comm) (28 March 2024). In this dispute, Zephyrus Aviation acted on behalf of numerous Western owners/lessors, and Fidelis Underwriting represented an equal number of insurers/reinsurers, for a total of 78 claims.

The defendants objected, stating that the reinsurance policies between the Russian lessees and Fidelis provided for the exclusive jurisdiction of Russian courts. They consequently requested the suspension of the proceedings before the High Court.

Upon the production of the reinsurance policies by the defendants, Zephyrus stated that they had discovered for the first time in court the exclusive jurisdiction clauses in favour of Russian courts, arguing that they had never been made aware of such provisions, as they were not parties to the reinsurance contract.

Zephyrus then requested the High Court to reject Fidelis' suspension request, as English jurisprudence provides that specific jurisdiction agreements may be disregarded if there are "*strong reasons*" or "*valid reasons"*. According to Zephyrus, the *valid reasons* in this case were:

- the concrete risk of not receiving a fair trial in Russia;
- the potential contrast between the request to initiate proceedings in Russia and public policy, considering that such a request would undermine the effectiveness of sanctions imposed by the UK and others against the Federation and instead guarantee effectiveness to Russian counter-sanctions;
- the risk of multiple judgments with potentially conflicting outcomes.

2. The Decision

Having considered these arguments, the High Court confirmed that, according to English jurisprudence, there may be *valid reasons* to:

- override principles such as contractual autonomy, enforcement of agreements, and certainty in commercial exchanges [3];
- disapply an exclusive jurisdiction clause in favour of foreign courts;
- reject a request to suspend proceedings initiated in the UK.

Following a detailed review of its case law, the English High Court based its decision on the following principles:

- the elements constituting *valid reasons* to disapply an exclusive jurisdiction clause and reject a suspension request depend on the facts and circumstances of the specific case;
- the burden of demonstrating the existence of *valid reasons* lies with the party intending to invoke them;
- identifying the UK as the "appropriate" forum based on foreseeable reasons evaluated in a mere convenience analysis is not sufficient to support the presence of valid reasons;
- a matter merely concerning the interests of justice might not constitute a valid reason if such a matter was foreseeable and, as such, could have been evaluated in the parties' agreement on the jurisdiction clause;
- the risk of prejudice the plaintiff would suffer by having to start proceedings before a foreign court if, because of political, racial, religious, or other reasons, that would undermine their possibility of obtaining a fair trial is a *valid* reason [4].

3 Which instead support the validity of exclusive jurisdiction clauses.
4 On this point, the Judge noted, however, that judicial decisions present differing views and that, in fact, in the majority of cases, factors of mere convenience are always considered and evaluated separately from the interests of justice.

In light of these principles, the High Court considered whether it was likely for Zephyrus to receive a fair trial in Russia. Particular importance was given to expert testimonial evidence, based on which the Court deduced that Russia, in cases of significant public interest, does influence the normal course of justice. Therefore, according to the Court, the specific circumstances of the case suggest a strong state involvement and that it is likely that Zephyrus would not be guaranteed a fair trial. Specifically, the Court noted a significant interest of the *Russian National Reinsurance Company*, a state-owned insurance company, in the outcome of proceedings concerning aviation insurance/reinsurance linked to leasing contracts with Russian lessees, and that the decision in such a case would have a significant impact on Russia's interests in the aviation sector. Furthermore, the fact that Russian Courts could not objectively evaluate and decide on a series of relevant factual circumstances, such as the validity of Russian countermeasures against Western sanctions and the existence of war and conflict-related damages, was taken in consideration.

Ultimately, the Court considered it likely that Russian Courts would not apply the leasing contract conditions to assess the validity of the contractual terminations and the plaintiffs' right to the restitution of the aircraft. As an "*unfriendly State*," the unlikelihood of obtaining a fair trial in Russia was indicated by the Court as a *valid reason* to disapply the exclusive jurisdiction clauses stipulated in the reinsurance contracts and thus reject the request to suspend the proceedings in the UK.

3. Conclusions

The decision in the *Zephyrus Aviation vs. Fidelis Underwriting* case sets a significant precedent for future litigation in the aviation sector. It is a precedent that could significantly influence future decisions on similar cases, also due to the analytical and detailed nature of the judgment.

The decision does not imply that English Courts will be more inclined in the future to deny suspension requests, but it makes clear that—in the presence of specific factual circumstances—it is possible for English judges to set aside jurisdiction clauses agreed upon by the parties, whose validity would be supported by general principles, in favour of the principle of fair trial and overriding justice needs.

The Chinese Blacklist Rules in Relation to Air Passengers: Starting with Aviation Security and Safety

Shitong He* & Yuran Shi**

Unruly behaviour in civil aviation is a widespread phenomenon that disrupts the good order and discipline on board, and thus poses threats to aviation safety and security. The Chinese passenger blacklist rules address this problem. The following article provides a comprehensive analysis of the Chinese regulations that govern these blacklists and evaluates their respective drawbacks. Additionally, it assesses the practical effectiveness of the blacklists by examining their legal effects and offering suggestions for improvement.

Introduction

While the air transport industry is witnessing international, cooperative efforts to promote aviation security and safety,[1] unruly and disruptive behaviour in civil aircraft is increasing.[2] Essentially, unruly passengers refer to passengers who fail to respect the rules of conduct on board aircraft or to follow the instructions of crew members and thereby disturb the good order and discipline on board aircraft.[3]

Unruly behaviour involves various types of offences and reprehensible acts, such as assault on crew members or passengers, fights among intoxicated passengers, child molestation, sexual harassment and assault, refusal to stop smoking or consuming alcohol, destruction of safety equipment on board, and other disorderly or riotous conduct.[4] Unruly behaviour has a disproportionate impact, threatening safety, disrupting other passengers and crew, and causing delays and diversions.[5]

According to a survey conducted by the International Air Transport Association (IATA), there were 1,132 reported cases of unruly passengers in 1994, 2,036 cases in 1995, 3,512 cases in 1996, and 5,416 cases in 1997, respectively.[6] Up until now, it has still been a serious issue. From 2021 to 2023, the rate of unruly behaviour rose from 1 incident for every 835 flights to 1 incident for every 450 flights.[7]

Given the long-term trend of increasing frequency and severity of unruly passenger incidents, it is imperative to implement regulatory measures, whether international, national, or both, preferably in combination, to curb unruly behaviour and thus enhance aviation safety and security.

The Chinese blacklist rules in relation to air passengers provide a regime aimed at dealing with increasing unruly behaviour in civil aviation. As a regime established by relevant regulatory authorities, air transport associations, and air-

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1 The IATA and IFALPA, Strengthening The Legal Deterrent Against Unruly & Disruptive Passengers In The Post-Pandemic Era (41st Seesion of ICAO Assembly, 2022).

2 Latest IATA figures show that there has been an increase in the rate of reported unruly passenger incidents. Based on over 24,500 incident reports from over 50 operators globally, there was 1 incident for every 480 flights in 2023 versus one incident for every 568 flights in 2022. See IATA, 'Unruly Passengers: Fcat Sheet' <https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---unruly-passengers/#:~:text=Latest%20IATA%20figures%20show%20that,every%20568%20flights%20in%202022> accessed 8 July 2024.

3 ICAO, Guidance Material on the Legal Aspects of Unruly/Disruptive Passengers (Circular 288-LE/1, 2002).

4 Ibid.

5 IATA, 'Unruly Passengers' <https://www.iata.org/en/programs/passenger/unruly-passengers/> accessed 8 July 2024.

6 See ICAO, supra note 3.

7 See IATA, supra note 2; see also IATA, Even Safer and More Enjoyable Air Travel for All: A Strategy for Reducing Unruly and Disruptive Passenger Incidents (2023).

lines, it denies boarding to passengers who have done things that endanger the safety of air transport.[8] This regime aims to safeguard the safety and good order of civil aviation.

Unruly behaviour can negatively impact aviation safety and security. Considering that international air law, to begin with its constitution, the Chicago Convention on International Civil Aviation of 1944,[9] henceforth referred to as the Chicago Convention (1944), aims to guarantee these two important values of international flights, it is essential to review relevant international rules before examining the legal effects of the blacklist rules in China.[10]

The following section is designed to explain the said international air law regime.

1. International air law pertaining to unruly passengers

1.1. The Chicago Convention (1944) and its Annexes

The Chicago Convention (1944) was concluded by 52 States against the background of World War II and designed to regulate the developing aviation industry around the world.[11] Scholars consider it as "an overarching and underpinning legal framework for international civil aviation and has been referred to as the Magna Carta of international aviation".[12] As per the Preamble to and Article 44 of the Chicago Convention (1944), its aims and objectives include ensuring the safe and orderly growth of international civil aviation throughout the world and promoting the safety of flight.

The Chicago Convention (1944) does not regulate unruly behaviour. However, its Annex 9 and Annex 17 directly mention unruly passengers.[13] As per Article 37 of the Chicago Convention (1944), States shall adopt regulations in accordance with those established under the Convention and the Standards adopted by the International Civil Aviation Organization (ICAO) as embodied in Annexes to the Convention. ICAO, a United Nations specialised agency,[14] develops Annexes to the Chicago Convention (1944).[15] It aims to achieve strategic objectives, including enhancing global civil aviation safety and global civil aviation security and facilitation, through making rules of safety known as Standards and Recommended Practices (SARPs). Specifically, a Standard is a requirement that States shall follow unless they file a notification of non-compliance pursuant to Article 38 of the Chicago Convention (1944). A Recommendation is a desirable requirement that States should try to comply with.[16]

Annex 17 only provides the definition of 'disruptive passenger' and a general encouragement that States shall "develop requirements for the carriage of potentially disruptive passengers".[17] Annex 9 encompasses more specific rules for unruly passengers. It provides that every Contracting State shall deter and prevent unruly behaviour.[18] Provisions in relation to unruly passengers in Annex 9 follow with a Note, pointing out that "Guidance material on the legal aspects of unruly/disruptive passengers can be found in Circular 288—Guidance Material on the Legal Aspects of Unruly/Disruptive Passengers".[19]

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8 Zhihong Gao, 'The Ternary System of Civil Aviation Passenger Blacklist in China and Its Remedies' (2020) 4 Law Science Magazine 32.
9 Signed at Chicago on 4 April 1947, entry into force on 4 April 1947, with 193 State parties per 8 July 2024.
10 See the Preamble to the Chicago Convention (1944), stipulating that "the undersigned governments having agreed on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically".
11 Benjamyn I. Scott and Andrea Trimarchi, *Fundamentals of International Aviation Law and Policy* (Routledge 2020) 70.
12 Pablo Mendes de Leon and Benjamyn I. Scott, 'An Analysis of Unmanned Aircraft Systems under Air Law', in Aleš Završnik, Drones & Unmanned Aerial Systems: Legal & Social Implications for Security & Surveillance (Springer 2016) 187.
13 Annex 9 to the Convention on International Civil Aviation – Facilitaion (15th edn ICAO 2017); see also Annex 17 to the Convention on International Civil Aviation – Aviation Security – Safeguarding International Civil Aviation against Acts of Unlawful Interference (10th edn ICAO 2017).
14 Pablo Mendes de Leon, Introduction to Air Law (10th edn) (Kluwer Law International 2017) 64.
15 *Ibid.*, at 75.
16 *See Benjamyn I. Scott and Andrea Trimarchi, supra note 11, at 73*.
17 Annex 17 to the Convention on International Civil Aviation – Aviation Security – Safeguarding International Civil Aviation against Acts of Unlawful Interference (10th edn ICAO 2017).
18 Annex 9 to the Convention on International Civil Aviation – Facilitaion (15th edn ICAO 2017).
19 *Ibid.*

The ICAO Council took actions to deal with unruly behaviours, leading to the drafting of Circular 288 in 2002. Such actions included the incorporation of the subject of unruly passengers into the General Work Programme of the Legal Committee in 1996 and establishing a Secretariat Study Group on Unruly Passengers in 1997.[20] Provisions laid down in Circular 288 pertain to the drafting of a list of specific offences for inclusion in national law, the extension of jurisdiction over such offences, and the appropriate mechanisms for addressing these offences.[21] It established the Model Legislation on Certain Offences Committed on Board Civil Aircraft (Model Legislation) in its appendix, thereby listing specific types of unruly behaviours. However, as quoted that "the proposed model legislation is recommended for incorporation into national law",[22] Circular 288 is a non-binding guidance that is addressed to the Contracting States of ICAO only "for their information and recommended action".[23]

The Chicago Convention (1944) and the SARPs laid down in its Annexes have not established a comprehensive regulatory framework regarding unruly behaviours identified in civil aviation. In addition to this convention, there are also international aviation security conventions relating to unruly passengers. These will be comtemplated in the next sections.

1.2. The Tokyo Convention (1963)

Since the 1960s, civil aircraft have become a principal target of terrorist attacks.[24] In order to combat hijacking, sabotage, and other acts of unlawful interference against civil aircraft, a number of legal instruments were concluded under the auspices of ICAO.[25]

The Convention on *Offences and Certain Other Acts Committed on Board Aircraft*, henceforth referred to as the Tokyo Convention (1963) is the first international treaty specifically dealing with aviation security.[26] As per Article 1, it applies to two situations: any act that is an offence under the criminal laws of a contracting State; any act that may jeopardise safety, good order, and discipline on board, no matter whether such an act is an offence or not.[27] Unruly behaviour violates the rules of conduct on board aircraft or fails to follow the instructions of crew members and thereby disturbs the good order and discipline on board aircraft.[28]

Such behaviour may cover two situations under the Tokyo Convention (1963). On the one hand, unruly behaviour may violate the criminal law of a Contracting State as an offence. For example, sexual harassment and assault on crew members are offences because they violate the domestic criminal laws of many Contracting States. On the other hand, even if unruly behaviour is not as serious as an offence that violates criminal law, the Tokyo Convention (1963) may still apply since such behaviour may "jeopardise safety, good order and discipline on board". Therefore, the Tokyo Convention (1963) regulates the actions of unruly passengers.

In light of the legal effects of dealing with unruly passengers, the Tokyo Convention (1963) has the following shortcomings. It does not define what an 'offence' is. As a result, each State retains the discretion to determine on-board offences punishable under their respective domestic laws. Certain kinds of unruly behaviour could constitute an offence on-board an aircraft from State A, but not onboard an aircraft from State B.[29] Also, it fails to provide a clear definition of 'good order' or 'discipline'. As yet, it is unknown under which circumstances and with which elements of unruly behaviour will

20 See ICAO, *supra* note 3.
21 *Ibid.*
22 *Ibid.*
23 *Ibid.*
24 Jiefang Huang, *Aviation Safety through the Rule of Law* (Kluwer Law International 2009) 11.
25 *Ibid.*
26 Signed at Tokyo on 14 September 1963, entry into force on on 4 December 1969, with 187 State parties per 8 July 2024.
27 Article 1 of the Tokyo Convention (1963).
28 *Ibid.*
29 Christian Giesecke, 'Unruly Passengers: The Existing Legal System and Proposed Improvements' (2001) 26 Annals Air & Space Law 45, 49.

be considered acts that may jeopardise safety, good order, and discipline on board.

1.3. The Montreal Convention (1971)

The Tokyo Convention (1963) was concluded to deal with the problem of hijacking. However, it was soon realised that hijacking was not the only crime against the safety of civil aviation. To address other threats to aviation safety, such as sabotage, and to overcome the limitations of the Tokyo Convention (1963), the Convention for the *Suppression of Unlawful Acts against the Safety of Civil Aviation*, henceforth referred to as the Montreal Convention (1971) was drawn up.[30]

While the Montreal Convention (1971) provides a definition of 'offence',[31] its application to unruly behaviour remains questionable. As per Article 1, certain acts will be considered offences. If an act is likely to endanger the safety of the aircraft, and if the act is performed unlawfully and intentionally by a person, such an act constitutes violence against a person on board an aircraft in flight. Therefore, the Montreal Convention (1971) might apply to unruly behaviour, as unruly behaviour may threaten the safety of aircraft onboard. However, it has limitations in its application, as not all unruly behaviours are likely to endanger the safety of aircraft. The Montreal Convention (1971) will not apply if acts committed by unruly passengers jeopardise the good order and discipline on board without being likely to endanger the safety of the aircraft.[32] As a result, some unruly behaviours may fall outside the scope of this Convention and therefore can't be punished.

1.4. The Montreal Protocol (2014)

The Protocol to *Amend the Convention on Offences and Certain Other Acts Committed on Board Aircraft*, hereinafter referred to as the Montreal Protocol (2014), was designed to modernise the Tokyo Convention (1963).[33] According to its preamble, the Montreal Protocol (2014) aims at addressing "concern about the escalation of the severity and frequency of unruly behaviour on board aircraft" and "the desire of many States to assist each other in curbing unruly behaviour and restoring good order and discipline on board aircraft".[34] The Montreal Protocol (2014) does not amend Article1(1) of the Tokyo Convention (1963), which means that it does not change the scope of application as an 'offence and jeopardising act'.

While the Montreal Protocol (2014) does not provide a comprehensive definition of 'offence and jeopardising act' compared to the Tokyo Convention (1963), it offers guidance by using the phrase 'in particular'. As per Article 15 *bis*, it specifically outlines two types of such acts: physical assault or threat to commit physical assault against a crew member, and refusal to follow safety instructions issued by the aircraft commander.[35]

The Montreal Protocol (2014) forms a breakthrough for unruly behaviour as it notably stands as the first international civil aviation security convention to directly mention 'unruly and disruptive acts on board'. The provision regarding unruly behaviour in the Montreal Protocol (2014) still requires implementation in national legislation. This need is reinforced by the Montreal Protocol (2014) itself, which encourages "each Contracting State to introduce or maintain in its national legislation appropriate measures in order to punish unruly and disruptive acts committed on board".[36]

France has provided a good practice example. To support international uniformity and certainty, France became a party to the Protocol in 2021.[37] On 1 June 2022, France announced a system of administrative sanctions that can be used

30 Signed on 23 September 1971, entry into force on 26 January 1973, with 188 State parties per 8 July 2024; see also Jiefang Huang, supra note 22, at 131.
31 Article 1 of the Montreal Convention (1971).
32 Christian Giesecke, 'Unruly Passengers: The Existing Legal System and Proposed Improvements' (2001) 26 Annals Air & Space Law 45, 57.
33 Concluded on 4 April 2014 , entry 1 January 2020, with 84 State parties per 8 July 2024.
34 Article 1 of the Montreal Protocol (2014).
35 Article 15 bis of the Montreal Protocol (2014).
36 *Ibid.*
37 See IATA, supra note 7.

by the competent authorities against a disruptive passenger "who, during a flight operated as public air transport by a French company, hinders flight personnel or refuses to comply with a safety instruction given by the flight personnel".[38]

1.5. An observation

One of the shared legal gaps in the aforementioned international laws is the lack of a clear definition, which leads to a problem with their application to unruly behaviour. Additionally, enforcement is another shared problem. None of the conventions on aviation security have been ratified by all ICAO Member States.[39] ICAO did not see fit to sponsor any new multilateral treaty following the events of 11 September 2001.[40] Especially, the reluctance of ICAO to respond to the events of 11 September by convening a new international treaty reflects a general lack of confidence in the multilateral treaty making process.

One of the reasons for this phenomenon might be the difficulty of building up a uniform enforcement regime among States.[41] On board the aircraft, pilots-in-command must ensure the safe conduct of flights, adhering to standards in Annex 2 and relevant regional or national laws. This obligation involves responsibilities such as inspecting aircraft conditions, ensuring the well-being of aircrew members, passengers, and cargo, and correspondingly, dealing with unruly behaviour.[42] Nevertheless, the right of individual States to exercise domestic jurisdiction does not mean that an unruly passenger will be arrested, charged, and prosecuted by the government. Prosecutors often assess the perceived severity of an unruly passenger incident and determine that bringing criminal proceedings will not be in the public interest or an appropriate use of limited resources,[43] especially when such unruly behaviour does not directly violate the interests of the State where the aircraft is registered.

In order to cope with the seriousness of unruly passengers on board aircraft, and as mandated by the above international agreements on the subject, China has drawn up rules on this matter.

The next section elucidates the legal regime promulgated by the Chinese legislator.

2. The blacklist rules in China

2.1. The establishment of blacklists

In China, there have been blacklist rules to address the growing issue of unruly behaviour in civil aviation. While national laws, such as the criminal law, regulate certain acts that jeopardise safety and order aboard aircraft, they do not specifically address unruly behaviour. Specifically, the Civil Aviation Administration of China (CAAC), the China Air Transport Association (CATA), and airlines have introduced their own blacklists and corresponding rules.

The following sections will discuss these measures, to begin with the CAAC regime (3.1), followed by the provisions drawn up by the CATA (3.2) and the blacklists set up by airlines (3.4). Section 3.5 will discuss the enforcement of blacklists drawn by different institutions.

38 *Ibid*.
39 Paul Stephen Dempsey, Aviation Security: The Role of Law in the War Against Terrorism, (2003) 41 COLUM. J. TRANSNAT'L L. 649, 660.
40 Simon Brinsmead, *Rulemaking in ICAO, the ILO and the IMF: The Rise of Standards*, (2007)<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1002758> accessed 8 July 2024.
41 *Ibid.*
42 Pilots-in-command and flight attendants may restrin unruly passengers during the flights. On 3 March 2024, an ruly passenger attempted to open the cockpit doors. To prevent a further escalation, the flight attendants requested the help of off-duty law enforcement officers, who restrained the defendant in flex cuffs and sat next to him for the remainder of the flight. See Azza Eid v. Alaska Airlines, 621 F.3d 858, 2010 WL 2977727 (9th Cir. 2010).
43 See *IATA, supra* note 7.

2.2. The CAAC regime

2.2.1. The CAAC Opinions

The CAAC published Opinions on Strengthening the Rule of Law in Civil Aviation, henceforth referred to as the CAAC Opinions. These proposed the concept of a 'passenger blacklist' for air transport security for the first time.[44]

Issued by the CAAC in 2015, these Opinions aim to promote the safe and healthy development of civil aviation. Although the CAAC Opinions states the need to "regulate the 'passenger blacklist' rule for air transport security in accordance with the law, clearly define the reasons, authorities, and procedures for inclusion in the 'passenger blacklist'", they only provide general guidance on the blacklist rules in relation to air passengers. Especially, it fails to define various reasons why passengers may be subject to the blacklist restrictions.

2.2.2. The 385 Document

In the Outline of the Plan for the Construction of a Social Credit System (2014-2020),[45] released in 2014, the Chinese government clarified the general idea of the construction of a social credit system. It also introduced requirements for establishing a system of joint measures for credit failure and credit management tools across various industries, including the civil aviation industry. In this connection, Opinions on Appropriately Restricting Specific Serious Defaulters from Travelling on Civil Aircraft for a Certain Period of Time to Promote the Construction of a Social Credit System, henceforth referred to as the 385 Document, came out as such a tool for implementing the social credit system.[46]

The 385 Document extends beyond defaulters. As per its preamble, its aims also include "preventing the adverse impact of offences committed by some passengers on the safety of civil aviation flights". Therefore, the 385 Document establishes passenger blacklists to restrict both serious defaulters and unruly passengers from travelling on civil aircraft.

Within the first section of its restriction scope, it prohibits passengers who have been sentenced to an administrative penalty or who were criminally liable for committing specific acts at an airport or on board an aircraft from travelling on civil aircraft.

Such acts include: fabricating or intentionally spreading false terrorist information related to civil aviation air defence security; using forged, altered or fraudulent use of other people's identity documents and vouchers for travelling on airplanes; blocking, forcibly occupying, impacting the check-in counters, security channels, boarding, carrying or consigning dangerous goods, prohibited goods and controlled items stipulated by national laws and regulations; intentionally concealing in the carry-on or consigned baggage other than those stipulated by the State belongs to the civil aviation prohibited and restricted articles of transport; forcibly boarding or occupying an aircraft, intercepting an aircraft, forcibly entering or impacting the cockpit, runway and ramp of an aircraft; obstructing or inciting others to obstruct the flight crew, security check, check-in and other civil aviation staff in the performance of their duties, and carrying out or threatening to carry out a physical attack; forcibly occupying a seat or baggage rack, fighting, picking quarrels, intentionally damaging, stealing or unauthorized opening of the aircraft or aircraft facilities and equipment and other disturbances to the order of the cabin; use of open flames, smoking, illegal use of electronic equipment in the aircraft, and do not listen to persuasion; and, theft of other people's belongings on board the aircraft.

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44 Civil Aviation Administration of China, 'Opinions on Strengthening the Rule of Law in Civil Aviation' <http://www.caac.gov.cn/XXGK/XXGK/ZFGW/201601/P020160122452801172476.pdf> accessed 8 July 2024.

45 The State Council of the People's Republic of China, 'Outline of the Plan for the Construction of a Social Credit System (2014-2020)' <https://www.gov.cn/zhengce/content/2014-06/27/content_8913.htm> (accessed 8 July 2024).

46 The State Council of the People's Republic of China, '*Opinions on Appropriately Restricting Specific Serious Defaulters from Travelling on Civil Aircraft for a Certain Period of Time to Promote the Construction of a Social Credit System*' <https://www.gov.cn/zhengce/zhengceku/2018-12/31/content_5434997.htm> accessed 8 July 2024.

2.2.3. Concluding remarks

Different from a national law that can regulate administrative penalties to restrict citizens' personal freedom, the 385 Document – made jointly by eight administrative agencies – only holds the status of an administrative rule. Therefore, it is debatable whether the 385 Document, based on its lower legal hierarchy compared to national law, can legally restrict the freedom of passengers to travel by air.

There is no publicly available information on how governmental bodies and the judiciary enforce the 385 Document.

The next section will explain the regime created by the CATA.

2.3. The CATA regime

2.3.4. CATA's mandate

Founded in 2005, CATA is a non-profit Chinese national trade organisation and legal entity comprising primarily air carriers, enterprises, public institutions, and social legal persons.[47] Its responsibilities include

> *"with the approval of relevant government departments, organising and participating in the formulation and revision of standards and specifications for air transport-related industries, and carrying out publicity and implementation work to promote the implementation of standards and specifications."*[48]

CATA operates as an industry association rather than a governmental authority. The blacklist established by CATA is therefore an industry blacklist rather than an administrative blacklist.

2.3.5. The CATA measures

Unruly behaviour of civil aviation passengers has frequently disrupted the public order, wasted a large amount of civil aviation security resources, and caused adverse social impacts in China. For example, from January to May 2015, 12 unauthorised openings of hatches by passengers on board aircraft occurred throughout China, seriously disrupting civil aviation operations and safety.[49] In response to increasing cases of unruly behaviour, CATA introduced Administrative Measures for the Record of Unruly Behaviour of Civil Aviation Passengers (the CATA Measures) in 2016.[50] Article 2 of the CATA Measures defines unruly behaviour as the behaviour of a civil aviation passenger that

> "*disrupts the order of air transport and endangers aviation safety, causing serious adverse social impacts, or that should be punished in accordance with relevant laws, regulations and civil aviation rules*."[51]

Article 1 of the CATA Measures, henceforth also referred to as the Measures, aims "to maintain the order of air transport, guarantee the safety of air transport, improve the quality of service, and safeguard the interests of the majority of civil aviation passengers".[52] Specifically, it regulates unruly behaviour based on provisions laid down in the selected national laws, including the Civil Aviation Law, the Public Security Administration Punishments Law, and the Regulations on Civil Aviation Safety and Security. Some of these actions can be considered unruly behaviours, while others should be

47 CATA, 'Introduction to CATA' http://www.caac.gov.cn/GYMH/MHGK/STZZ/201509/t20150923_1957.html accessed 8 July 2024.
48 *Ibid.*
49 Xinhua News Agency '*Trial begins in first case of unauthorised hatch opening by aircraft passenger*' <https://www.gov.cn/xinwen/2015-05/11/content_2860196.htm> accessed 8 July 2024.
50 China Air Transport Association 'Administrative Measures for the Record of Unruly Behaviour of Civil Aviation Passengers' <http://www.caacnews.com.cn/1/2/201602/t20160205_1192808.html> accessed 8 July 2024.
51 *Ibid.*
52 *Ibid.*

considered criminal offences, which are more serious.

Laws	Actions
Criminal Law of the People's Republic of China[1]	1. hijacking of aircraft; 2. violence against the safety of flights; 3. sabotage of aircraft or airports; 4. sabotage of aviation facilities; 5. endangering public safety by illegally carrying dangerous goods; 6. assembling a crowd to disrupt order at civil aviation stations; 7. making up false information;
Public Security Administration Punishments Law of the People's Republic of China[2]	1. disturbs the order of aircraft; 2. illegally stopping or boarding aircraft; 3. stealing, damaging, or illegally moving any aviation facilities in use, or forcing into the cockpit of any aircraft; 4. using any device or tool that may affect the normal functions of the navigation system on an aircraft in use; 5. counterfeiting, altering, and scalping passenger tickets; 6. driving aircraft without a driving license or driving the aircraft of any other person without permission; 7. illicitly carrying any gun, ammunition, crossbow, dagger, or any other tool controlled by the State; 8. spreading rumours or false information;
Regulations of the People's Republic of China on Safety and Security of Civil Aviation[3]	1. boarding or occupying an aircraft by force; 2. making false reports about threatening dangers and creating confusion; 3. any other acts disturbing the order of the airport; 4. smoking in the no-smoking section; 5. racing to occupy a seat or a baggage compartment (rack); 6. fighting, getting drunk, or seeking a quarrel and stirring up trouble; 7. stealing, deliberately damaging, or moving without authorization lifesaving appliances; 8. other acts endangering flight safety or disturbing order within the aircraft;
Note	1 Criminal Law of the People's Republic of China came into effect on 1 Mar. 2024. 2 Public Security Administration Punishments Law of the People's Republic of China, came into effect on 1 January 2013. 3 Regulations of the People's Republic of China on Safety and Security of Civil Aviation came into effect on 8 Jan. 2011.

Article 4 of the Measures provides that a civil aviation passenger demonstrating one or more of the following behaviours shall be included in the blacklist, that include, blocking, forcibly occupying, impacting the check-in counters, security check channels and boarding again; violating the regulations to enter the apron, runway and taxiway; forcibly boarding, intercepting the aircraft; personal attack on civil aviation staff or threaten to commit such an attack; forcibly entering the cockpit, unauthorized opening of the emergency hatch; intentional damage to the airport, aircraft facilities and equipment; obstructing civil aviation staff in the performance of their duties or inciting passengers to obstruct civil aviation staff in the performance of their duties; violating cabin safety regulations and refusing to carry out the crew's instructions; fighting or provoking trouble in the airport or aircraft; making up, intentionally spreading of false terrorist information; other acts that disturb the order of air transport, cause serious adverse social impacts,

or are punishable according to relevant laws, regulations and civil aviation rules.[53]

2.3.6. Concluding remarks

There are no domestic laws in China that directly authorise the CATA to formulate passenger blacklists, whereas the CATA Measures itself does not specify the source of its authority. This lack of clarity raises questions about the legality and justification of CATA's formulation of the passenger blacklist.

Furthermore, according to Article 11 of the Legislation Law of the People's Republic of China, matters concerning the restriction of citizens' personal freedom can only be regulated by the legislation introduced by the National People's Congress or the Standing Committee of the National People's Congress.[54]

Given that a passenger blacklist imposes restrictions on individuals' right to travel freely, it should only be governed by national laws enacted by these bodies. As the Measures is created by CATA and not national law, it is debatable whether it, with a lower legal hierarchy, can rightfully constrain passengers' air travel freedom.

2.3.7. The CAAC 385 Document vs the CATA Measures

While both the 385 Document and the CATA Measures provide for detailed rules pertaining to the air passenger blacklists, there are differences between them. *Firstly*, the 385 Document requires that the passenger has been priorly sentenced to an administrative penalty or held criminally liable before he or she is subject to the blacklist, while the CATA Measures does not include such a requirement. *Secondly*, although both documents provide that passengers who are engaged in unruly behaviour should be included in blacklists, the CATA Measures do not specify any consequences of being listed. *Thirdly*, the removal mechanism for the passenger blacklist differs between these two documents. The CATA Measures provides for two removal periods: if the unruly passenger receives administrative punishment, the record lasts for two years; otherwise, it lasts for only one year. The 385 Document provides only one removal period: natural expiration after one year.

Although these two documents have differences, one aspect remains the same. Regardless of whether legal recourse is achieved under the CATA Measures or the 385 Document, seeking legal recourse if mistakenly blacklisted is difficult. The Measures allows passengers to file objections and complaints with the CATA but does not offer any other legal remedy.

The 385 Document introduces 'guidance on litigation', requiring courts to handle civil and administrative litigation arising from passenger blacklists, clarify adjudication standards, administer justice fairly, and safeguard the lawful rights and interests of all parties. In practice, however, the CAAC fails to provide passengers with departmental contact information for filing objections or clear procedures for administrative reconsideration or litigation, thereby rendering the litigation guidance provisions in the 385 Document virtually invalid.

Due to the lack of prior notification and information publication, most passengers are not informed of the restriction on their rights until they have booked the ticket, and there is no way to safeguard their entitelements through remedies. In fact, no single administrative reconsideration or litigation against CAAC or CATA has ever been found.[55] It is worth doubting whether this result is out of the design of the blacklist rule that lacks access to the complaint or out of other reasons.

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53 China Air Transport Association, *'Administrative Measures for the Record of Unruly Behaviour of Civil Aviation Passengers'* <http://www.caacnews.com.cn/1/2/201602/t20160205_1192808.html> accessed 8 July 2024.

54 Legislation Law of the People's Republic of China came into effect on 15 Mar. 2023.

55 Zhihong Gao *'The Ternary System of Civil Aviation Passenger Blacklist in China and Its Remedies'* (2020) 4 Law Science Magazine 32 39.

Since the CATA Measures came into effect on 1 February 2016, the CATA has published sixteen batches of unruly behaviour records for a total of 411 passengers, from 8 April 2016 to 31 May 2018.[56] Since the 385 Document was implemented on 1 May 2018, the CAAC began publishing passenger blacklists on its official website in June 2018. As of September 2021, a total of 7,454 passengers had been recorded on the CAAC blacklists.[57] Interestingly, after the CAAC started to publish its passenger blacklist on 1 June 2018, the CATA ceased publishing its own blacklist. Whether this is a coincidence or an intentional arrangement remains unknown.

2.4. The airline blacklists

In addition to passenger blacklists established by the CAAC and the CATA, airlines also establish their own passenger blacklists. Interestingly, airline blacklists came out long before the introduction of aftorementioned documents.

The case of *Fan Houjun vs Xiamen Airlines* was known as the first passenger blacklist case in China.[58] Fan Houjun, a former aviation security officer of Xiamen Airlines, had a labour dispute with Xiamen Airlines. However, he failed to resolve the dispute according to the rules of the contact, and proceeded to repeated threats and intimidation against Xiamen Airlines and its employees. His actions included physically assaulting individuals, which constituted a serious violation of discipline.

Subsequently, Fan Houjun found out that he was banned from booking tickets for Xiamen Airlines. In response, he sued Xiamen Airlines for banning him from boarding flights. The judgement provided by the District Court of Beijing, henceforth referred to as the Court, supported Xiamen Airline for establishing passenger blacklists, pointing out that:

> *"Although existing laws and regulations have not yet made clear provisions on restricting passengers from boarding an aircraft by its owner or operator, the ICAO has provisions on denying boarding to those who may affect aviation safety, and domestic airlines also have corresponding industry management norms to regulate this. The high risk of air transport is well known to the public, and aviation safety affects the lives and property rights of many passengers. Based on the dispute with Fan Houjun and some irrational behaviours of Fan Houjun, Xiamen Airlines suspected that Fan Houjun's travelling on the plane might cause safety problems and took restrictive measures, which Fan Houjun should understand."*[59]

The Court recommended that Xiamen Airlines meticulously drafted and publicly disclosed conditions on carriage, subject to review by regulatory authorities, especially if refusing a passenger is deemed necessary for flight safety.[60] Additionally, the Court suggested including specific provisions for removal conditions and access to objection procedures when adding someone to the passenger blacklist. The Court also recommended that passengers placed on the blacklist be duly informed.[61]

Various airlines in China have implemented passenger blacklisting rules in their general conditions for transportation. For example, China Southern Airlines states that it retains the right to refuse transport to any passenger if, for security reasons or at its own reasonable discretion, it believes certain circumstances apply.[62] These circumstances include

56 CATA 'Records of Unruly Behaviour of Civil Aviation Passengers (16th Batch)' <https://www.cata.org.cn/portal/content/show-content/18737/zghxwmcx-bwmxwjl> (accessed 8 July 2024).
57 Zhihong Gao, *'Study on the Entry Criteria and Exit Mechanism of Civil Aviation Passenger Blacklists'* (2022) 24 Journal of Nanjing University of Aeronautics and Astronautics 138.
58 *Fan Houjun v. Xiamen Airlines* (2010) Zhong 02 Min Zhong No. 8432.
59 *Ibid.*
60 *Ibid.*
61 *Ibid.*
62 China Southern Airlines Company Limited *'General Conditions of Carriage for Passenger & Baggage'* <https://www.csair.com/cn/tourguide/booking/orders/order/gnysztj/#5> (accessed 8 July 2024).

committing any act, intentional or not, that may endanger the safety of the aircraft or passengers on board, or causing a medical emergency during air transport, with a likelihood of recurrence. Air China also sets up a similar rule in its general conditions for transportation.[63] It asserts its right to refuse carriage if it judges certain circumstances, such as past engagement in unacceptable behaviour during air transport, may occur again and threaten safe and orderly air transport.

As there is no specific legal ruling on the matter, the question of whether airlines have the right to implement passenger blacklists and refuse passengers from boarding flights remains unresolved. Additionally, the Civil Code of the People's Republic of China imposes a mandatory contracting obligation on airlines to conduct public transport. It is worth considering whether the airline blacklists violate this mandatory contractual obligation.

2.5. Concluding remarks

The Chinese blacklist rules drawn up in the 385 Document and the CATA Measures aim to provide a regulatory regime dealing with the negative impacts of unruly behaviour upon aviation security and safety. In light of the fragmentation of these blacklists, they may not contribute to an effective tool.

Through examining the legal effects of various types of blacklists for air passengers available in China, policy recommendations can help improve the application of relevant rules and guarantee high levels of air services. The next section will address recommendations for that purpose.

3. The way forward

3.1. Legal effects of the blacklists

3.1.1. Comparative analysis of the CAAC and CATA blacklists

Once passengers are recorded on an official blacklist, whether it is established by the CAAT or the CATA, the legal effect remains the same: they are prohibited from boarding any flight. Therefore, official blacklists established by the CAAC and the CATA in practice can be examined and analysed collectively. In contrast, blacklists established by individual airlines result in passengers being banned solely from flights operated by that specific airline, which will be further analysed later.

In general, analysis of the official blacklists can consider elements such as the location of unruly behaviour, the types of unruly behaviour, preliminary procedures, administrative penalties, and the duration of inclusion in the blacklist.

In light of the location of unruly behaviour, passengers mostly behave in an unruly manner on board aircraft, at security checkpoints, during check-in, boarding, and after disembarkation. Additionally, there are cases where it is difficult to determine where the unruly behaviour has occurred and instances where passengers do not actually board the flight, such as falsely claiming there was a bomb on board the aircraft.

As regards types of unruly behaviour, blacklists established by the CATA differ slightly from those established by the CAAC. According to the 385 Document, the CATA's blacklists cover nine types of unruly behaviour. The most common cases involve crew members, including violations of cabin safety regulations, refusal to obey crew instructions, physical attacks or threats against crew members, and obstruction of crew duties, among others. Other reasons for inclusion on the CATA's blacklists include fighting or causing disturbances at the airports and on board aircraft; blocking or disrupting the check-in counters, security check lanes, and boarding gates or passages; intentional damage to airport or aircraft facilities and equipment; unauthorised entry into the aircraft cockpit; unauthorised opening of the aircraft; unauthorised

63 Air China *'General Conditions of Carriage Passenger and Baggage'* <https://www.airchina.com.cn/www/en/html/index/general_conditions_o/general_passenger/1012/> (accessed 8 July 2024).

access to aprons, runways, and taxiways; forcible boarding or interception of aircraft, and other behaviours that disrupt the orderly operations of flights.

In contrast, the CAAC's blacklists primarily focus on three types of unruly behaviours: carrying or hiding prohibited dangerous items, using fake identification documents, and obstructing crew in the performance of their duties or inciting passengers to do so.

In relation to preliminary procedures, passengers who engage in unruly behaviour and are subsequently recorded on a blacklist are typically subjected to preliminary administrative detention, administrative detention with a fine, or more severe measures such as criminal coercive measures.

With respect to administrative penalties imposed, aside from a small number of administrative conciliations, most passengers on the blacklist are fined from CNY 200 to CNY 500.(64)

Pertaining to the duration of inclusion on the blacklist, passengers are typically prohibited from taking flights for either one or two years.

3.1.2. The airline blacklists

Long before the CAAC and the CATA established official passenger blacklists, airlines laid down their own blacklists. Since passengers recorded on airline blacklists are only prohibited from taking flights of that specific airline but not of all airlines, airline blacklists have a different legal effect than official blacklists and therefore should be analysed separately. Generally, airline blacklists are established based on their own General Conditions of Carriage, which means that airlines have the discretion to make decisions regarding their own passenger blacklists.

In 2024, the Shanghai First Intermediate People's Court heard an appeal case concerning a dispute concerning a passenger's refusal to board an airline flight, ultimately supporting the airline's decision to prohibit the passenger from taking its flights.(65) The incident involved Ms. Xia and Cathay Pacific Airways in 2022.(66) Ms. Xia encountered difficulties during check-in at Shanghai Pudong Airport while travelling with her daughter to Hong Kong – she was unable to check in because she could not find her and her daughter's immigration documents. Despite assistance from airline staff, Ms. Xia and the staff had a verbal or even physical conflict, and the staff reported to the police. Although Ms. Xia later found the required documents, she missed her flight. While she was waiting to check-in for a rebooked flight, the airline's staff handed her a Notice of Refusal of Carriage stating that the airlines had prohibited her from boarding as well as carriage of her luggage, and any future flight of the airlines. Dissatisfied, Ms. Xia frequently took to social media to express her grievances in strong language and sued the airline for alleged infringement of her personality rights, demanding an apology, compensation, and cessation of the alleged infringement.

Ms. Xia's continued posting on social media following the incident indicates her ongoing antagonistic stance towards the airline. This behaviour not only fails to help resolve the conflict but also further strengthens the airline's perception that she is still unfit for air travel. Thus, the airline's decision to maintain its refusal to carry Ms. Xia is supported by factual evidence. The Shanghai Court ruled against all of Ms. Xia's claims and upheld the airline's ban on her flight.

Judicial practices generally support the airlines' authority to formulate their own passenger blacklists and prohibit un-

64 For the reference, CNY 1 is equivalent to EUR 0.1270 on 8 July 2024. See European Central Bank, *'Euro Foreign Exchange Reference Rates'*, <https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-cny.en.html> accessed 8 July 2024.

65 CCTV News 'Woman Permanently Refused Carriage by Airline Due to Conflict at Check-in and the Court ruled so' <https://content-static.cctvnews.cctv.com/snow-book/index.html?item_id=17835160030015427866&t=1714366913055&toc_style_id=feeds_default> (accessed 8 July 2024).

66 *Ibid.*

ruly passengers from boarding their flights out of safety concerns. If passengers are recorded on an airline's blacklist, they are banned from boarding flights operated by that airline.

3.2. Suggestions on the blacklist rules

3.2.3. The inclusion and removal mechanisms

Since passenger blacklists prohibit passengers from travelling by air, thereby restricting their freedom, the criteria for inclusion in official passenger blacklists should be clearly defined by national laws rather than administrative rules, as stipulated by the Legislation Law of the People's Republic of China. While international air laws on carrier liability, such as the Convention for the Unification of Certain Rules Relating to International Carriage by Air of 1929 (Warsaw Convention of 1929) and the Convention for the Unification of Certain Rules for International Carriage by Air of 1999 (Montreal Convention of 1999), do not provide measures designed to refuse passengers on board aircraft, they do permit the freedom of contract, allowing air carriers to refuse to enter into a contract of carriage.[67]

Although airlines have the discretion to establish their own blacklists, the criteria for inclusion should not exceed those defined by national laws to avoid infringing on passengers' right to travel by air.[68] Furthermore, both the official blacklist and the airline blacklist lack clear and practical removal mechanisms. Official documents and airlines' General Conditions of Carriages should include relevant rules detailing how to remove oneself from a blacklist.

3.2.4. The information publication system and privacy protection

A clear and timely information publication system should be established by the competent authorities and airlines, which can provide details about how and why passengers are subject to the blacklist rules, and how they are formulated and enforced. Without it, passengers may only discover they are on the blacklist when booking flight tickets, sometimes after they have already made travel plans and booked hotels, incurring extra costs. Therefore, it is recommended to establish a clear and timely information sharing system to inform passengers as soon as they are recorded on the blacklist. This system should also explain why they have been blacklisted and how they can be removed from the blacklist.

The blacklist rule regime for air passengers essentially aims to ensure aviation security and safety without compromising the airline industry's business interests. Nevertheless, the application of these rules should pay careful attention to protecting individuals' personal data. In China, the Personal Information Protection Law (2021), is the first comprehensive legislation specifically focused on the protection of personal information.[69] Its primary aim is to safeguard personal data, protect individuals' privacy rights, and regulate the collection, use, and management of personal information by organisations, thus being closely relevant during the process of applying the blacklist rules.

As organisations automatically rely on the support of natural persons, airlines will process personal data for a number of reasons, which include the establishment and enforcement of blacklists pertaining to air passengers.[70] Ensuring pro-

67 Lalin Kovudhikulrungsri, The Right to Travel by Air of Persons with Disabilities (Leiden University Dissertation 2017) 54.

68 Practices in other States also give insights on how national laws may deal with unruly behaviour on aircraft. For example, New Zealand amended its Civil Aviation Act in 2004 to address unruly behaviour, introducing various offences like disruptive conduct towards crew member or interference with aircraft. The Act also outlines procedures for dealing with these offences, allowing authorities to prosecute offenders through ordinary criminal procedures or issue infringement notices, with fees ranging from 500 to 1000 New Zealand dollars. Similarly, France introduced a system to sanction disruptive passengers by amending its Transport Code. This code also addresses various types of disruptive behaviour, including refusal to comply with safety instructions from flight crew. Three types of sanctions can be imposed: an administrative fine for up to 10,000 euros, a ban on boarding for up to two years, or imprisonment for up to five years along with a fine of 75,000 euros. See IATA, Even Safer and More Enjoyable Air Travel for All: A Strategy for Reducing Unruly and Disruptive Passenger Incidents (2023).

69 The Personal Information Protection Law (2021) (《中华人民共和国个人信息》), came into force on 1 November 2021.

70 Lord, Brendan, 'The Protection of Personal Data in International Civil Aviation: The Transatlantic Clash of Opinions' (2019) 44(3) Air and Space Law 261.

cedural fairness, transparency, and robust data protection are essential measures to prevent unnecessary infringements on personal privacy. By balancing the need for aviation safety with the protection of individual rights, the system can achieve its goals without compromising the privacy and freedoms of the individuals it affects.

3.2.5. The blacklists of unruly passengers or defaulters

Since the 385 Document establishes passenger blacklists to restrict both serious defaulters and unruly passengers from travelling on civil aircraft, there is a risk of confusing the unruly passenger blacklist with the social credit system outlined in section 3.2.2, above.

The purpose of the unruly passenger blacklist is to protect civil aviation safety and security, while the social credit system aims to promote social honesty and trust. It is recommended to separate these two different blacklists to ensure that support for the passenger blacklist is not compromised.

4. Conclusion

Due to the lack of a comprehensive international air law regime regulating unruly behaviour, national regulatory measures are necessary to address the increase in such incidents. Chinese passenger blacklists serve as a national measure to manage unruly behaviour. Although these blacklists specify types of unruly behaviour, they have several shortcomings: lack of clear definitions, unclear applicability, low legal status, absence of effective legal remedies when individuals are mistakenly included into blacklists, and a lack of transparent information publication procedures. Therefore, more specific domestic rules are needed to improve the passenger blacklist regime and mitigate the negative impacts of unruly behaviour.

This article was designed to contribute to the preparation of such national provisions, in which context due attention ought to be paid to the privacy rights of passengers in conjunction with data protection. Additionally, the inclusion and removal mechanisms should be clear enough to avoid unnecessary negative impacts on passengers' rights to travel. Without specifying specific offences and particular penalities or charges in international law, it is for each State to identify in its national law specific offences and mitigate their negative impacts. In this connection, the blacklist rules in China fail to provide a good example, where future improvements can provide lessons for subsequent legislative and prosecutive practices in other jurisdictions.

Environmental Issues affecting the Aviation Industry: An Indian Legal Perspective

by Vikrant Pachnanda

Introduction

Aviation is an integral contributor to the health and well-being of the nation's economy. Commercial aviation has also over the due course of time evolved as the fastest, safest, and most far-reaching transportation mode globally [(1).] Over the next 20 years International Air traffic Association1 (IATA) forecasts passenger growth of 6.1% per year on average – the number of annual air passenger journeys is forecasted to increase by more than 350 million over the period, moving to almost 520 million journeys in 2037 [(2)]. This strong growth outlook for air passenger demand1 will see India overtake Germany, Japan, Spain, and the UK within the next 10 years to become the world's third largest air passenger market [(3)]. Aviation is one of the fastest-growing sources of greenhouse gas emissions globally and currently it contributes to 2% of overall anthropogenic Greenhouse Gas (GHG) Emission (Intergovernmental Panel on Climate Change (IPCC), 2004) [(4)].

1. Interlink between Aviation and Environment

The International Civil Aviation Organization's (ICAO) 2016 Environmental Report (On Board A Sustainable Future) states that changes to the atmosphere, brought about by rising global temperatures caused by greenhouse gas emissions, will affect airplane's ability to fly, while rising sea levels will affect airports. Exploring the use of bio jet fuels, energy efficient infrastructure, electric vehicle, green taxiing vehicle etc. proper regulatory frameworks and favourable market conditions will help in Aviation GHG reduction. Aircraft noise near airports poses major health and environmental risk raising public concerns and is likely to impact future operations, as well as expansion and development of airports. The development and operation of an airport causes gaseous and particulate emissions from different sources including aircraft operations, ground support equipment, airport infrastructure and landside access traffic. Effective land use planning around the airports in cooperation with Development Agencies, will enable smooth airport operations with reduced environmental footprints and will be beneficial for sustainable aviation [(5).]

Airports are also the cause of degrading the environment due to various factors. For instance, pollution being caused at airports by *ground access vehicles* (GAV) and *ground support equipment* (GSE). Moreover, pollution is also caused at the airports especially during peak hours as several aircrafts are waiting for take-off clearance while several others have their engines idling and leading to a clear visibility of a smoky environment at the airport's tarmacs. Another defying aspect of pollution at airports is the *biodiversity* that includes plants/tree plantations and birds, and this type of destruction creates a huge imbalance in the ecosystem and may lead to disturbances in the ecological good chain. The use of Auxiliary Power Unit (APU) which is a generator that provides power for engine start and extra air conditioning in the aircraft is also a cause of pollution at the airports [(6)].

Waste Management by municipal bodies around the airports is also one of the concern areas for airport & aircraft operation. Improper waste management leads to bird attraction which is a threat for aircraft operation at airport. There is a strong need for all the concerned agencies to ensure proper waste management around the airports. The lengthy and complex process of obtaining Environment clearance of airport projects (new and expansion) sets back the developmen-

1 White Paper on National Green Policy, Ministry of Civil Aviation, Government of India, 2/19.2019.
2 *Ibid*.
3 https://www.globalaviationsummit.in/documents/IATA-INDIA%E2%80%99S-AIR-TRANSPORT-SECTOR.pdf (last accessed on 30.04.2020).
4 *Supra* note 1.
5 *Ibid*.
6 Shaik Nazim Ahmed Shafi, "*Environmental Issues in Aviation Industry: An Indian Perspective*", Journal for Environmental Law, Research and Advocacy, 2016.

tal activities which are required to cater to the needs of the rapidly growing aviation sector of the country. Hence the Ministry of Civil Aviation envisaged a Green Civil Aviation Policy with a clear objective of achieving sustainable growth of the civil aviation. This policy sets out a strategic framework to address the major environmental challenges of the aviation industry. Furthermore, it comprehends the key environmental issues of the sector and emphasizes the Government's approach towards environment protection [7].

This policy aims at supporting sustainable and inclusive growth of the Indian civil aviation sector and align it with ICAO's Vision and Mission. It endeavours to (a) provide a foundation for enhancing the integration of environmental sustainability and regulatory requirements into the planning, decision-making, approvals and operations of Airports, Airlines, Air Navigation Services, Ground Support System etc.; (b) enhance the aviation systems from conventional to advanced environment friendly, resource efficient infrastructure/system with reliable and sustainable alternatives such as green building concept, etc. and (c) to reduce GHG and other gaseous emissions in line with national and global frameworks by considering use of fuel efficient fleets, advanced air navigation system with flexible use of airspace, emission free ground support equipment etc. [8].

Aircraft emissions also cause considerable damage to the environment. Aircrafts contaminate the environment as their emissions directly enter the sensitive areas of the atmosphere which protect the earth from the sun rays. Some potentially toxic substances emitted by aircrafts are nitrogen oxide (NOX) and to a lesser extent carbon dioxide (CO2) which damage earth's ozone layer and may contribute to global warming. Aviation harms the environment indirectly through the pollution of ground water by de-icing chemicals, the plethora of environmental issues associated with airport expansion in wetlands, and noise pollution to surrounding neighbours. Approximately 2% of the global emissions of greenhouse gases (GHGs) attribute to the aviation industry, which is a significant contributor to climate change [9].

The 33rd ICAO Assembly adopted a Resolution that introduced four elements to mitigate noise namely (a) reduction of aircraft noise at source; (b) land use planning and management; (c) noise abatement operational procedures and (d) operating restriction [10]. The Noise Pollution (Regulation and Control) Rules 2000 that were formulated pursuant to the enactment of the Environment Protection Act, 1986 do not really create a comprehensive set of rules that deal with noise pollution from an aviation perspective [11]. There are yet no specific legislations in India that particularly deal with curbing aviation pollution. The current existing legislations including the Environment Protection Act, 1986 has a very broad scope and pertain to environmental pollution in general by defining it as the presence in the environment of any environmental pollutant [12].

Similarly, the Air (Prevention and Control of Pollution) Act, 1981 defines air pollution as the presence in the atmosphere of any air pollutant [13]. Air Pollutant as per its definition includes noise present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment [14]. The Aircrafts Act, 1934 while containing several provisions however does not provide for curbing of any aviation related pollution. Exposure to noise is a continuing challenge whether by aircrafts or the airports and poses a severe threat to the right to life as enshrined by Article 21 of the Indian Constitution especially those residing around the airports or lying

7 *Supra* note 1.
8 *Ibid*.
9 Vikrant Pachnanda, "*A Guide to India's Aviation Law*", Thomson Reuters, 2019.
10 https://www.icao.int/Meetings/AMC/MA/Assembly%2033rd%20Session/plugin-resolutions_a33.pdf (last accessed on 01.05.2020).
11 http://www.indiaenvironmentportal.org.in/files/noise%20pollution%20IGI%20Airport%20NGT%20Judgement.pdf. Also see Society for Protection of Cultural Heritage v. Union of India & Ors., Appeal No. 60 of 2013 before the National Green Tribunal.
12 Section 2(c) of the Environment Protection Act, 1986.
13 Section 2(a) of the Air (Prevention and Control of Pollution) Act, 1981.
14 Section 2(b) of the Air (Prevention and Control of Pollution) Act, 1981.

directly under approach path of the aircraft [15]. While the booming aviation industry has no doubt contributed to the global economy, however that cannot be a justification for aviation pollution taking place. The 1992 Rio Declaration on Environment and Development [16]. introduced the concept of the 'Precautionary Principle' and 'Polluter Pays Principle' which play an important role in settling the conflict between the development of a nation and environmental concerns. The Latin maxim "*Salus populi suprema* lex *esto*" which means that the health welfare, good, salvation, felicity of the people should be the supreme law, would be very appropriate to mention here [17].

There is no such framework existing in India to address the environmental impact of aviation in India barring the *Aviation Environmental Unit* (AEU). The Director General of Civil Aviation i.e. India's aviation watchdog (DGCA) came out with Aviation Environment Circular 1 of 2009 dated 16.09.2009 for the creation of an aviation environment cell in airlines, aerodrome operators and air navigation service provider organizations in order to address aviation environmental issues. As per this circular, the AEU had been set up in DGCA to coordinate the aviation related environmental issues. The environmental cell that would be set up needs to play a pivotal role between the concerned organization and DGCA on the issues pertaining to aviation environmental areas and would be responsible for maintaining data and information pertaining to fuel consumption, carbon emissions, energy demand etc and develop future action plans to reduce the carbon footprint of the respective organization.

2. International legal position

According to Article 44 of the Chicago Convention, 1944 ('the Chicago Convention'), one of the aims and objectives of the International Civil Aviation Organization ('ICAO') is to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to promote generally the development of all aspects of international civil aeronautics [18]. Since reducing environmental impacts of aviation to ensure protection of the environment is one of the aspects of international civil aeronautics [19], it implies that ICAO has a duty to regulate emissions from international civil aviation. The Chicago Convention facilitates the adoption of International Standards and Recommended Practices (SARPs) as Annexes to the Chicago Convention by the ICAO Council, in accordance with Article 90 to address new issues to meet the current global needs [20].

The ICAO Council is bound to adopt SARPs in accordance with the provisions of Chapter VI of the Convention [21], i.e. Articles 37-42. Among these provisions, Article 37 provides guidelines regarding such adoption that each Contracting State undertakes to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation [22].

ICAO thus has an obligation to "*adopt and amend from time to time, as may be necessary, international standards and recommended practices and procedures dealing with*" communications systems, air navigation aids, characteristics of airports and landing areas, rules of the air, air traffic control practices, licensing of personnel, airworthiness of aircraft, registration and identification of aircraft, collection and exchange of meteorological information, log books, aeronauti-

15 *Supra* note 6.
16 Rio Declaration on Environment and Development (adopted 3 June 1992) [1992] Principle 11.
17 Black's Law Dictionary, Fifth Edition.
18 Article 44(1) of the Chicago Convention (adopted on December 7,1944, entered into force on April 4, 1947) 15 UNTS 295.
19 See ICAO, "ICAO Strategic Objectives 2014–2016", available at ICAO www.icao.int/about-icao/Pages/Strategic-Objectives.aspx (last accessed on 30.04.2020).
20 *Supra* note 18, Article 37.
21 *Ibid*, Article 54(l).
22 *Ibid*, Article 37.

cal maps and charts, customs and immigration procedures, aircraft in distress and investigation of accidents, and "such other matters concerned with the safety, regularity, and efficiency of air navigation as may from time to time appear appropriate" [23].

The ICAO Council has also adopted Annex 16 to the Chicago Convention to address aviation environmental issues. Annex 16, divided into two volumes, addresses aviation environmental issues. Volume I of Annex 16 deals exclusively with the protection of the environment from the effect of aircraft noise, and Volume II is devoted to addressing the issue of aircraft engine emissions [24]. This includes standards relating to vented fuel with regard to all turbine engine powered aircraft intended for operation in international air navigation manufactured after 18 February 1982 [25], as well as standards relating to emissions certification applicable to the types of aircraft engines specified in the individual chapters of the Part, where such engines are fitted to aircraft engaged in international civil aviation.

The Contracting States to the Chicago Convention are required to adopt measures to ensure that all aircraft flying over or manoeuvring within its territory or carrying their nationality mark shall comply with the rules and regulations relating to the flight and manoeuvre of aircraft there in force [26]. In these respects, all the Contracting States undertake to keep its own regulations "*uniform, to the greatest possible extent, with those established from time to time under this Convention*" [27], i.e. with SARPs promulgated by ICAO.

Articles 37 and 38, weaken the binding nature of the Annexes as they allow any Contracting State to the Convention to avoid implementing the Annexes [28], Article 37 invites all the Contracting States *"to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organization*" [29]. However, the phrase "*highest practicable degree of uniformity*" has not been defined anywhere thus leaving the room open for ambiguity. Article 38 allows deviation from any standard or procedure of any Annexes or any amendment thereto by any Contracting State [30]. According to Article 38, if any State finds it "*impracticable to comply in all respects*" with any of those standards or procedures, it merely has to notify ICAO of the discrepancy between its own practice and the respective standard or procedure [31].

Climate Change in another environmental law related issue that has arisen in the aviation industry over the last few years. Climate change can be defined as "*any natural or induced change in climate either globally or in a particular area*" [32]. According to the United Nations Framework Convention on Climate Change (UNFCC), climate change means "*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods*" [33]. Aviation is a small but significant contributor to climate change and global warming. It is a small contributor since it is responsible for approximately 2 percent of global CO^2 emissions.

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23 *Ibid*.
24 ICAO, (2014) 7 International Standards and Recommended Practices: Annex 16 to the Convention on International Civil Aviation: Volume 1, Aircraft Noise; ICAO, (2008) 3 International Standards and Recommended Practices: Annex 16 to the Convention on International Civil Aviation: Volume 2, Aircraft Engine Emissions [Annex 16: Volume 2].
25 *Annex 16: Volume 2,* at ix, II-1-1.
26 *Supra* note 18, Article 12.
27 *Ibid*.
28 Md Tanveer Ahmad, "Achieving Global Safety in Civil Aviation: A Critical Analysis of Contemporary Safety Oversight Mechanisms" (2012) 37 Ann Air & Sp L 81 at 86 [Ahmad, "Achieving"].
29 *Supra* note 18, Article 37.
30 *Supra* note 18, Article 38.
31 *Ibid*.
32 Chris Park, *A Dictionary of Environment and Conservation*, 1st ed (Oxford:Oxford University Press, 2007).
33 *United Nations Framework Convention on Climate Change*, 9 May 1992, 1771 UNTS 107, Can TS 1994 No 7, art 1(2) (entered into force 21 March 1994) [*UNFCCC*].

The Parties to the UNFCCC acknowledged climate change and its adverse effects as "*common concern of humankind*"[34]. The UNFCCC reaffirms the principle of sovereignty of States in international cooperation to address climate change, and determines to protect the climate system for present and future generations [35], i.e. intergenerational change and objective of the UNFCCC is to stabilize "*greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*" [36]. Therefore, it can be easily deciphered that the need to protect the environment was not envisaged at the time of negotiation and drafting of the Chicago Convention in 1944 and, hence no provisions on environmental protection were incorporated therein. However, the Convention indirectly still confers responsibility on ICAO to address aviation environmental issues.

The ICAO adopted the Programme of Action on International Aviation and Climate Change [PAIACC] in June 2009, which included the following admirable elements [37]:

a. a 2 percent annual improvement target in fuel efficiency globally until the year 2050;
b. a decision to develop global CO^2 standards for aircraft;
c. a decision to develop a framework for market-based measures for international aviation;
d. measures to assist developing States and to facilitate access to financial resources, technology transfer, and capacity-building;
e. collection of international aviation emissions data by ICAO;
f. development and submissions to ICAO of States' voluntary action plans on emissions;
g. continued work on alternative fuels for aviation.

In 2010, the ICAO Assembly adopted Resolution A37-19 to limit or reduce emissions from aviation that contribute to climate change.38 Thus, the Resolution included:

a. a global goal of 2 percent annual fuel efficiency improvement up to the year 2050;
b. a global framework for the development and deployment of sustainable alternative fuels for aviation;
c. a target of 2013 for a CO^2 standard for aircraft engines;
d. the development of a framework for market-based measures;
e. a feasibility study on the creation of a global market-based measure scheme and guiding principles for States to use when designing and implementing market-based measures for international aviation;
f. mechanisms for technology transfer to developing States;
g. a requirement for States to submit to ICAO their action plans for reaching goals set by the Organization;
h. assistance for States to meet their respective objectives;
i. exemptions from market-based measures for States with very low emissions due to their small traffic base [39].

34 *UNFCCC, supra* note 33, Preamble.
35 *Ibid.*
36 *Ibid*, Article 2.
37 ICAO Secretariat, "ICAO Programme of Action on International Aviation and Climate Change" in ICAO, *ICAO Environmental Report 2010: Aviation and Climate Change* (Montreal: ICAO, 2010) 8 at 8 [ICAO Secretariat, "ICAO Programme"].
38 See *Consolidated statement of continuing ICAO policies and practices related to environmental protection — Climate change*, ICAO Assembly Res A37-19, 37th Sess, ICAO Doc 9958, I-67, online: ICAO <www.icao.int/publications/Documents/9958_en.pdf> [ICAO Res A37-19].
39 See ICAO, Press Release, PIO 14/10, *ICAO Res A37-19*.

At its 38th Session held in 2013, the ICAO Assembly adopted Resolution A38-18 dealing with climate change, wherein States decided to *develop* a global market-based measure for international civil aviation [(40)].

The European Union's (EU) Emissions Trading System (ETS) is one of a few unilateral environmental measures concerning international civil aviation that are currently in place. International civil aviation has been included within the EU ETS since January 1, 2012 in accordance with Directive 2008/101 [(41)]. The EU ETS resembles one of the three market-based measures introduced in the Kyoto Protocol, namely emissions trading and works on the cap-and-trade principle under which "*there is a 'cap', or limit, on the total amount of certain greenhouse gases that can be emitted*" [(42)] by different types of companies. Failure to surrender sufficient allowances under this mechanism will lead to a fine of €100 per ton of carbon emitted over the limit set by Directive 2003/87 [(43)].

This scheme of unilaterally imposing emissions tax applied to all emissions from flights taking off from or landing in the EU even if it were a non-EU airline and the majority of the emissions from that flight would be emitted outside EU airspace. However, the Indian government strongly opposed this proposal on imposing emissions tax unilaterally by the European Commission (EC). The EC suspended this proposal until the meeting of the United Nations' aviation watchdog ICAO's Assembly meeting in October 2013. The EC revised their proposal on this imposition of emissions tax under which airlines would be taxed only for the distance they travel inside the EU and not for the entire distance from the originating country [(44)].

3. Conclusion

The aviation industry is indeed causing a substantial amount of environmental pollution. However, at the same time, aviation is no doubt an important sector for the overall development of the country. In my opinion, a specialised regulatory authority should be constituted to curb future environmental issues pertaining to the aviation sector. For example, for aviation security, there is a dedicated regulator namely the Bureau of Civil Aviation Security that was set up. India should also lobby for the establishment of a global ETS framework that adheres to the basic principle of equality, upon which the foundation of international law lies. Existence of a global ETS framework should ensure that there is a striking of a balance between the environment and economic development. This will justify in taking fiscal measures in consonance with the 'Precautionary' and 'Polluter Pays' Principles. The 1992 Rio Declaration on Environment and Development[45] introduced the concept of the 'Precautionary Principle' and 'Polluter Pays Principle' which play an important role in settling the conflict between the development of a nation and environmental concerns. If left unchecked, aviation's current and projected growth can have further impacts on climate. Hence achieving a balance is vital and there should be strict adherence to measures which reduce environmental pollution without imposing overly strict restrictions on aviation.

40 See *ICAO Res A38-18*, at I-72.

41 See *Directive 2008/101*. See also Md Tanveer Ahmad, "EU Emissions Trading Scheme: Problems Presented to Canada", *European Union Centres of Excellence Newsletter* 7:1 (Winter 2012) 1 at 1, online: Carleton University <carleton.ca/euce-network-canada/wp-content/uploads/V7-1-EUCE-Newsletter-Winter2012.pdf> [Ahmad, "EU Emissions"].

42 European Commission, "The EU Emissions Trading System (EU ETS): Policy", online: European Commission Climate Action <ec.europa.eu/clima/policies/ets/index_en.htm> [European Commission, "EU ETS Policy"].

43 See *Directive 2003/87*.

44 *Supra* note 9.

45 Rio Declaration on Environment and Development (adopted 3 June 1992) [1992] Principle 11.

ICAO Council's Dispute Settlement Capacity under Carbon Emission Reduction Measures (CORSIA) for International Aviation

by Luping Zhang* & Yue Zhao**

Introduction

Greenhouse gas emissions are considered to be one of the main culprits behind climate change [1], and in terms of CO^2 emissions from greenhouse gases, the transport sector accounts for about 23% of total global energy-related CO^2 emissions [2].

"*Carbon reduction from international aviation is an important part of global climate governance"* [3]. In order to promote the green and low-carbon development of international civil aviation, the International Civil Aviation Organization (*"ICAO")* has introduced a package of measures by means of Carbon Offsetting and Emission Reduction Scheme for International Aviation ("CORSIA"), including technology-based carbon reduction and market-based carbon reduction.

CORSIA is a market-based mechanism that uses Eligible Emission Units ("EEUs") to offset the incremental carbon emissions from international flights that cannot be reduced through aviation technology improvements, daily operational modifications and sustainable aviation fuels ("SAFs"). ICAO plans to use this mechanism to establish a total carbon emissions control and trading system, and to address the issue of incremental carbon emissions from aviation, ultimately achieving market-based regulation of greenhouse gas emissions from international aviation.

The implementation of CORSIA involves interactions with aircraft operators, verification organisations and carbon markets, whereby disputes may arise between the parties. Article 84 of the Convention on International Civil Aviation ("Chicago Convention") [4] gives the ICAO Council the quasi-judicial function of dispute resolution, and at the same time, ICAO served as a forum for political means to resolve disaggrements since 1944, which makes it an ideal forum for dispute resolution.

However, ICAO still has flaws in the clarification of the jurisdiction and the enforcement of the Council's decision. In dealing with the disputes under CORSIA, promoting the reform of ICAO's judicialisation will help ICAO to better perform its dispute resolution function under the CORSIA.

1. Defining CORSIA

1.1. Background of CORSIA

The carbon emission in international air transport industry has become a global climate issue [5], although it cannot be compared with that of the traditional industry and shipping. The aviation industry accounts for 2.4% of the world's annual CO2 emissions, which is equivalent to about 900 million tonnes of CO2 per year [6]. Civil aircraft's cruising altitude

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1 World Resources Institute. Carbon Removal [EB/OL]. http://www.wri.org/our-work/project/carbon-removal.
2 IPCC, Climate change 2022: Mitigation of climate change, Cambridge University Press, 2022.
3 Lei Li, Path Selection of International Aviation Carbon Emission Reduction and China's response, Journal of Beijing University of Aeronautics and Astronautics, 2023.
4 Chicago Convention on International Civil Aviation, art. 84.
5 Zheng Zhang, Carbon Offsetting and Carbon Offsetting in International Aviation under the Multilateral Climate Governance System Assessment of Emission Reduction Plan, Frontiers of Law, 2023.
6 Hai Yan, Qi Meng. Global Legal System development of Aviation Carbon Emission Reduction and Its Enlightenment to China, Journal of Nanjing

is concentrated between 9000-12000 meters, resulting in its exhaust emissions to the atmosphere stratosphere and upper troposphere [7]. These high-altitude emissions of carbon dioxide (accounting for 70% of the total high-altitude emissions), water vapour, nitrogen oxides, smoke particles and other substances in the atmosphere for a long period of time, has become an important villain of the greenhouse effect [8]. Some estimated that "*the contribution of aviation to the global radiation may be as high as 4.9 %"* [9], making aviation one of the key industries to focus on.

In 1992, the United Nations Intergovernmental Negotiating Committee ("INC") on climate change agreed on the first international legally binding rules for the reduction of greenhouse gas emissions - the United Nations Framework Convention on Climate Change ("UNFCCC"). Carbon emissions from international aviation, because of the complex cross-national sectoral issues involved, are not part of the UNFCCC, but fall in the responsibility of ICAO. The Kyoto Protocol, adopted in 1997, calls on developed countries to seek to limit or reduce greenhouse gas emissions from 'aviation bunker fuels' through ICAO [10]. The international community has recognised the problem of aviation carbon emissions and has made some efforts to control and reduce them.

In order to more effectively address the widespread problem of aviation carbon emissions in all countries, the ICAO convened the 39th ICAO Assembly in 2016, which achieved positive results in climate change negotiations. ICAO adopted the *Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection-Climante Change and the Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection - Global Market - based Measures Scheme* on October 6 (Montreal, Canada), which formed the first global market-based mechanism for emissions reductions in the industry, and the aviation industry became the first in the world to move from regulation by individual countries to implementation by the global programme.

1.2. History and Purpose of CORSIA

In 2001, ICAO's 33rd Assembly addressed the Council to establish "guiding principles for limiting or reducing the environmental impact of aviation emissions, in particular with respect to climate change", and in 2004, ICAO's 34th Assembly identified three major environmental objectives, one of which was to limit or reduce the global climate impact of aviation's greenhouse gas emissions.

In 2013, the 38th ICAO Assembly established market-based measures ("MBM") for aviation and called for the development of a stand-alone global aviation MBM. After the 36th General Assembly of ICAO in 2007, with the market-based measures elevated to be the main measures for carbon emission reduction in international air transport, the carbon emission reduction in international air transport and related negotiation issues were gradually separated from UNFCCC and dominated by ICAO [11].

In 2016, the 39th ICAO Assembly adopted the framework for the package of standards for CORSIA to achieve the CNG2020 target for the period of 2021-2035, and formed it into a package of international standards in 2018, which was incorporated into Annex 16 Volume IV of the Chicago Convention [12].

University of Aeronautics and Astronautics (Social Sciences), 2019.

7 P. J. Ansell and K. S. Haran, *Electrified Airplanes: A Path to Zero-Emission Air Travel*, IEEE Electrification Magazine, 2020.

8 Ruyi Li, Legal regulation of aviation carbon emissions: Foreign experience and Chinese practice, International Law Review of Wuhan University, 2018.

9 Bethan Owen, David S. Lee, and Ling Lim, Flying into the Future: Aviation emissions scenarios to 2050, Environmental Science & Technology, 2010.

10 Kyoto Protocol to the United Nations Framework Convention on Climate Change, art. 2.2.

11 Kwong-sang Yin,Adrian Ward,Paul Dargusch &Anthony Halog. The cost of abatement options to reduce carbon emissions from Australian international flight, International Journal of Sustainable Transportation, 2018.

12 Ankit Sharma, Suresh Kumar Jakhar, Tsan-Ming Choi, *Would CORSIA Implementation Bring Carbon Neutral Growth in Aviation? A Case of US Full Service Carriers*, Transportation Research Part D: Transport and Environment,2021.

Based on Article 43 of the Chicago Convention, the main purpose of the CORSIA is to incorporate the regulation of carbon emissions and carbon offsets in global aviation into market-oriented measures, and to ensure the sustainable development of *green aviation* globally by developing and restricting them at the same time, so as to further eliminate and synergise the differences between countries in the field of aviation.

Additionally, CORSIA is to further bridge and synergise differences between states in the aviation sector, and to bridge the gaps in aviation's ability to reduce and eliminate carbon dioxide emissions through continuous innovation in aircraft design, propulsion, operating procedures, fuels and other more sustainable means, in order to achieve the industry's desired goal of carbon neutral growth from 2020.

1.3. Goals of CORSIA

Currently, CORSIA consists of three offset phases:

- 2021-2023 (Pilot Phase)
- 2024-2026 (First Phrase)
- 2027-2035 (Second Phrase)

CORSIA does not include an offset obligation for 2036-2050, but requires that the monitoring, reporting and verification ("MRV") obligation for carbon dioxide emissions begin in 2019, and encourages ICAO Contracting States to voluntarily participate in CORSIA from 2021 to 2026.

With regard to target setting, the Long-Term Global Aspirational Goal ("LTAG") was adopted by ICAO at its 41st session in October 2022, which seeks to achieve net-zero carbon emissions from international aviation by 2050 worldwide. The goal does not assign specific obligations or commitments in the form of emission reduction targets to individual countries, but rather recognises that each country's particular national circumstances and respective capabilities (e.g., level of development, maturity of the aviation market, sustainable growth of its international aviation, a just transition, and national air transport development priorities) will influence the ability of each country to contribute to the long-term aspirational goal in accordance with its own national timetable.

1.4. Operation of CORSIA

In order to guarantee a level playing field between all airlines flying on the same route, CORSIA coverage is defined on a route-by-route basis: a route will be covered by CORSIA if both states at the origin and destination participate in CORSIA; if at least one state does not participate in the programme, the route will not be covered. Route coverage may change over time as states decide to volunteer and the programme moves into the mandatory phase. As of 1 January 2023, 115 States had announced their intention to participate in CORSIA. 11 more States (Antigua and Barbuda, Bahrain, Ecuador, Kuwait, Samoa, Seychelles, Sierra Leone, Solomon Islands, Mauritius, Malawi, and Haiti) announced their intention to participate in CORSIA from 1 January 2024, bringing the total number of participating States to 126.

The mode of operation of CORSIA is stipulated in Annex 16, Environmental Protection, Volume IV of the Chicago Convention:

- The aircraft operator monitors the CO^2 emissions, compiles the data on the emissions, and submits the CO^2 emission report to the State after verification by the verification agency;

- The State submits the emission information to ICAO after checking the report by order of magnitude, and the State calculates and notifies each aircraft operator of the final offset requirement after ICAO obtains the indus-

try growth factor required for calculating the offset requirement;

- The aircraft operator cancels a certain number of CORSIA-Eligible emission units in the registry designated by the CORSIA-Eligible emission unit programme to meet the above mentioned offset requirement;
- The aircraft operator compiles and verifies the unit cancellation report with the verifying agency, and the State conducts an order-of-magnitude check of the cancellation report [13].

In addition, as Article 38 of the Chicago Convention provides the States' obligation for the departure from international standards and procedures. It would be logical to predict that the reporting obligation under such an article would incresea under CORSIA.

2. Disputes Under the CORSIA

Given the large number of parties involved in carbon reduction measures for international aviation, including public parties (States, ICAO, European Union) and private parties (for example, aircraft operators, verification organisations and carbon markets.), potential disputes can be broadly categorised according to the type of parties: inter-state disputes, disputes between private parties and hybrid disputes [14]. As disputes between private subjects can be dealt with in domestic courts or arbitral tribunals, this paper will focus on inter-state disputes brought before ICAO.

Disputes between countries are manifested in many ways, typically represented by the conflict between the emission dispute mechanisms of individual countries and the differences in the implementation of national carbon reduction measures under CORSIA.

In the case of the European Union, for example, the dispute between countries and the EU originated from the conflict between EU Emissions Trading System ("EU-ETS") and CORSIA. The goal of CORSIA is to establish the only global market-based measure applicable to carbon emissions from international aviation to avoid a patchwork of duplicative national or regional market-based measures, thus ensuring that carbon emissions are counted only once. However, in 2026 the European Commission will evaluate CORSIA and, if CORSIA does not fully meet the objectives of the Paris Agreement, the EU will re-expand EU-ETS to all flights departing from an airport in an EEA country to an airport outside the EEA. If the European Commission finds that third countries have implemented CORSIA in a less stringent or unequal manner to the detriment of EU operators resulting in a distortion of competition, the EU will exempt EU operators from the obligation to fulfil the CORSIA offsets for flights to and from such third countries, thereby undermining the global reach of CORSIA and triggering disputes between countries that support CORSIA and the EU.

3. The ICAO Council as a Forum for Resolving CORSIA Disputes

3.1. The Jurisdiction of the ICAO

As CORSIA is included in the Annex 16, Volume IV of the Chicago Convention, Article 84 of the Chicago Convention reads that any interpretation and application of the Chicago Convention including Annex should be negotiated first, and then to the ICAO Council for a decision and finally an appeal may be possible through an *ad hoc* arbitral tribunal or the International Court of Justice ("ICJ").

13 ICAO, Annex 16 to the Convention on International Civil Aviation, Volume IV — Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), (2nd ed., July 2023).

14 Caixia Yang, Zi Wang, *Dispute Settlement Path of Aviation Carbon Emission under Carbon Emission Reduction Measures for International Aviation*, Journal of Beijing University of Aeronautics and Astronautics (Social Sciences Edition), 2023.

The ICAO has had to review general international law issues, such as the WTO rules or Kyoto Protocol when hearing international disputes under CORSIA, and whether the ICAO has the power to interpret the above documents depends on whether there is a bilateral air services agreement authorising it to do so, but in practice the ICAO usually chooses to maintain its jurisdiction even when it comes to interpreting documents other than those in the Chicago Convention [15]. And the ICJ has interpreted the scope of the ICAO Council's jurisdiction quite broadly: the ICAO Council has jurisdiction insofar as the interpretation or application of the Convention is unavoidable for the purpose of adjudicating the case, even though the case is about obligations other than those in the Convention.

3.2. Dual Dispute Settlement Mechanism - Political and Judicial Function

In handling the disputes, ICAO Council may exercise its quasi-judicial function under Article 84 of the Chicago Convention and beyond. Political and legal measures to resolve disputes under CORSIA can complement each other, especially political settlement is more suitable for inter-state dispute. Combining the dual dispute settlement mechanism, ICAO can deal with a wider range of disputed matters under CORSIA.

3.2.1. Political Resolution - Negotiation

The adoption of political settlement, represented by negotiation and consultation, has a very important role to play in the field of international aviation disputes. Political settlement is not restricted by any substantive or procedural rules, and it can propose a consensus solution after assessing the overall situation, avoiding the imposition of binding decisions on both parties, especially consultations have a crucial role to play as a pre-procedure agreed upon in many agreements.

As the political dispute settlement mechanism of Article 54(n) of the Chicago Convention has the obvious advantages of breadth and flexibility over the legal mechanism of Article 84, in practice, the Council has tended to interpret Article 54(n) broadly in order to settle disputes. For example, in cases such as *Congo v. Rwanda and Uganda, Samoa and Tonga v. Fiji,* the Council has taken the initiative to apply article 54(n), to settle disputes, thus avoiding the triggering of article 84 before the parties have filed their legal claims.

The Council has agreed on the corresponding preconditions for conciliation of disputes submitted to it, i.e., article 84 of Chicago Convention provides that the exercise of the Council's competence is subject to the condition that the contracting parties must have made corresponding negotiating efforts before submitting the dispute to the Council for settlement. In addition to this, article 14 of the *Rules for the Settlement of Differences* provides that if the Council considers that the possibility of settling the dispute or narrowing the differences by negotiation still exists, it may, at any time during the proceedings leading up to an adjudicatory meeting in accordance with article 15, paragraph 4, invite the parties to the dispute to engage in direct consultations. Secondly, with the consent of the parties concerned, the Council may provide any assistance that may facilitate consultations, including the appointment of individuals or groups to act as facilitators of consultations.

The ICAO Council has always played a vital role in negotiated mediation and has achieved significant results. Since its inception in 1944, the Council has played a 'political' role in the adjudication of seven international civil aviation disputes (See Table 1), resolving the disputes and promoting mediation, which ultimately contributed to the successful resolution of the disputes.

15 India v. Pakistan (1952), ICAO Doc. 7367 and 7361 (C /858); Qatar v Bahrain, Egypt, Saudi Arabia, and UAE, ICAO, (2017)

Table 1

Time	Case	Final Resolution
1952	India **v.** Pakistan [1]	Negotiation
1967	UK **v.** Spain [2]	Negotiation
1971	Pakistan **v.** India [3]	Negotiation
1998	Cuba **v.** United States [4]	Negotiation
2000	United States **v.** Fifteen Member States of the European Union [5]	Negotiation
2016	Brazil **v.** United States [6]	Suspended
2017	Qatar **v.** Bahrain, Egypt, Saudi Arabia, and UAE [7]	Negotiation
2022	Australia and The Netherlands **v.** Russia [8]	Submitted

Note
1 India v. Pakistan (1952), ICAO Doc. 7367 and 7361 (C /858)
2 UK v. Spain (1967), ICAO Doc. 8724.
3 Pakistan v. India (1971), ICAO Doc. 8985 C/1002, Doc. 8986 and Doc. 8987.
4 Cuba v. United States (1996), ICAO Doc. C-WP /10864.
5 United States v. Fifteen Member States of the European Union (2000), C-WP /12075.
6 Brazil v. United States (2016), ICAO Annual Report 2017, https://www.icao.int/annual-report-2017/Pages/supportingimplementation-strategies-legal-and-external-relations-services-settlement-of-differences.aspx, accessed on 2 April 2023.
7 Qatar v. Bahrain, Egypt, Saudi Arabia and UAE, ICAO (2017).
8 No references available yet.

3.2.2. Quasi-Judicial Function

Environmental issues are closely related to the politics of nations, and while resorting to political settlement of environment-related disputes is conducive to communication among nations, it also has drawbacks. Airline powers can gain more benefit through economic coercion, and the end result may not be fair and objective. Environmental litigation is important in addressing the triple planetary crisis of climate change, biodiversity loss and pollution. Access to justice allows people to take refuge in environmental law and to defend human rights.

Making full use of the quasi-judicial function of ICAO to deal with disputes arising from corsia could prevent some of the 'big powers' from taking advantage of their economic status to reduce their responsibility. The quasi-judicial function of the ICAO Council is derived from the Chicago Convention, due to its institutional potential and the ongoing revision of *the Rules for Settlement of the Differences*, the quasi-judicial function of the Council will be better exercised under CORSIA [16].

Firstly, in terms of institutional design, ICAO's dispute settlement mechanism is intended to design the Council as an 'international aviation court' for the settlement of legal disputes arising out of the interpretation and application of the Chicago Convention [17]. Article 84 of the Convention provides that if a dispute arises between two or more Contracting States concerning the interpretation or application of this Convention and its Annexes which cannot be settled by negotiation, it shall be decided by the Council on the application of any of the States concerned by the dispute. A State member

16 See Luping Zhang, *The Resolution of Inter-State Dispute in Civil Aviation*, Oxford University Press, 2022 for further discussion
17 Jose Alvarez, *International Organizations as Law Makers*, Oxford University Press, 2006.

of the Council which is a party to the dispute shall not vote in the Council during its deliberations. Any State Party may, in accordance with article 85, appeal against a decision of the Council to an *ad hoc* arbitral tribunal agreed to by the other parties to the dispute or to the Permanent Court of International Justice (now the ICJ). Any such appeal shall be notified to the Council within sixty days of notification of the Council's decision.

Secondly, in the early years following the establishment of ICAO, not only was the mechanism transposed by other multilateral international aviation conventions, such as the Agreement on International Flight Transit ("AIFT") and the Agreement on International Carriage by Air ("AITA"), but the majority of Contracting States took the initiative of granting the Council prior compulsory or non-compulsory adjudicative jurisdiction over disputes under bilateral air transport agreements. The ICAO Secretariat analysed the dispute settlement provisions of the 200 bilateral shipping agreements of the time in 1952, and came up with a number of different basic types:

1. a small number of agreements providing only for diplomatic settlement of disputes;
2. some of the agreements granting non-exclusive adjudicative jurisdiction to the Council;
3. granting exclusive adjudicative jurisdiction to the Council;
4. adjudication by the Council in the case of failure to establish a temporary ex post facto arbitral tribunal;
5. advisory report by the Council in the case of failure to establish an interim ex post facto arbitral tribunal.
6. in the event of a failure to establish an ex post facto tribunal, an advisory report by the Council [18].

Lastly, it is worth noting that, although some scholars have argued that the Council's advisory reports are non-binding, most bilateral agreements at the time that were willing to submit disputes to the Council contained the phrase "*each party [...] will use its best efforts to implement the intention expressed in any such report".* The expression 'exercise the utmost diligence in carrying out the intention expressed in any such report' was included in most bilateral agreements.. In order to ensure effective compliance with the decisions in Chapter XVIII of the Convention, the Convention provides for two different types of sanctions: one for individual airlines and one for States. The first is provided for in Article 87, which states that each State Party undertakes not to permit airlines of a particular State Party to pass through its airspace if the Council decides that the airlines of that State Party are not in compliance with a final decision taken in accordance with Article 86. With regard to sanctions against States, article 88 provides that the ICAO Assembly shall suspend the voting rights in the Assembly and the Council of any Contracting State found to have violated the provisions of this chapter.

3.3. Expertise

The most important function of ICAO is to provide a platform for countries to share information, express their views and reach new agreements through the General Assembly and other occasions. By promoting international coordination and co-operation, ICAO has won the recognition of the international community [19].

While the ICJ is the most authoritative platform for interpreting international law, as an ordinary court, the judges have demonstrated that they do not have the expertise to deal with complex scientific issues such as climate change [20]. It is clear that disputes over aviation carbon emissions are highly technical in nature. In contrast, ICAO is the ideal platform

18 An updated research till 2019 is provided by Luping Zhang, *How Are Disputes Resolved under Bilateral Air Services Agreements - A Typology, Journal of International Dispute Settlement, 12(1), 151-172, 2021.*

19 Brian F Havel and Gabriel Sanchez, Do we need a new Chicago Convention, Aviation Law and Policy, 2011.

20 Pulp Mills on the River Uruguay (Argentina v. Uruguay), (Judgment), 2010, I.C.J. Reps 14[108], Joint Dissenting Opinion of Judges Al-Khasawneh and Simmal.

for dispute resolution. As the most authoritative organisation in the field of civil aviation, ICAO has a wide range of talents in the field of civil aviation and can contribute great wisdom in dispute resolution.

Additionally, the Committee on Aviation Environmental Protection (CAEP) is a technical committee of the ICAO Council established in 1983. CAEP assists the Council in formulating new policies and adopting new Standards and Recommended Practices (SARPs) related to aircraft noise and emissions, and more generally to aviation environmental impact. CAEP undertakes specific studies, as requested by the Council. Its scope of activities encompasses noise, local air quality (LAQ) and the basket of measures for reducing international aviation CO^2 emissions, including aircraft technology, operational improvement, CORSIA. CAEP informs the Council's and Assembly's decision making with the ICAO Global Environmental Trends, which assess the present and future impact of aircraft noise and aircraft engine emissions. The Global Environmental Trends is crucial to the work of ICAO as it provides a robust single reference for sound discussion and decision-making. In disputes arising under CORSIA, the CAEP will provide expert advice to the Council for making a decision.

4. Suggestions for ICAO Council's Capacity in Dispute Resolution

Notwithstanding the Council's ability to hear disputes under CORSIA, to date, the powers and structure of the ICAO Council as currently embodied through the operation of its dispute resolution mandate are quasi-judicial. ICAO's dispute resolution process remains controversial, and there are still flaws in the jurisdiction and the enforcement of the decision. Amendments to the *The Rules for the Settlement of Differences would assist in the reform of the Council's dispute settlement mechanism.*

4.1. Clarification of the Jurisdiction

The admissibility of disputes under CORSIA is controversial. Although in practice the ICAO has generally chosen to maintain jurisdiction in the absence of detailed legal reasoning, some judges have argued that such a confirmation of jurisdiction would be an over-interpretation of the competence of the ICAO Council.

Currently, ICAO has not clarified the issue of jurisdiction, and such an ambiguous interpretation of jurisdiction would lead to mistrust among States Parties and a refusal to submit disputes to ICAO. The ICAO Council shall therefore confirm the scope of its jurisdiction and should provide additional clarification so that disputes arising under CORSIA would also be brought under its jurisdiction.

4.2. Strengthening the Enforcement of Decision

As aviation involves daily traffic, the longer the procedure lasts, the higher the losses for the parties to the dispute, and as a series of measures taken under CORSIA in the face of climate change place even greater emphasis on timeliness, the speedy resolution of disputes and the effective implementation of the Board's decisions are of great importance.

In order to ensure effective compliance with the decisions of Chapter XVIII of the Convention, the Convention provides for two different types of sanctions: one for individual airlines and the other for States. With regard to sanctions against States, article 88 of Chicago Convention provides that the ICAO Assembly shall suspend the voting rights in the Assembly and Council of any Contracting State found to be in violation of the provisions of this chapter.

Over the years, however, these sanctions have been subject to some criticism. Michael Milde, for example, has pointed out that in order to enforce Article 88 sanctions, a majority of States in the Assembly would have to be in favour of such a measure, and that it is "*undoubtedly motivated by a number of policy considerations*" [21]. Michael Milde also referred

21 M. Milde, *International Air Law and ICAO* 3rd edn, Eleven International Publishing, 2016.

to the political nature of sanctions as the kernel that 'binds' national subjects to the fulfilment of conventions and procedures. For reasons of international politics, the ICAO Council's dispute settlement mechanisms are rarely activated and the sanctions provided for in the conventions are never actually implemented. Although the ICAO Council's enforcement mechanism is very strong, the implementation of ICAO Council decisions is highly dependent on the validity of the decisions themselves, and actual sanctions are more likely to 'punish' members through political means than through judicial coercive measures.

Therefore, the Council should, firstly, actively exercise its judicial powers to ensure that decisions are taken and, secondly, guarantee their implementation in order to maintain the authority of the Council in aviation.

5. Conclusion

In the 21st century, how to reduce carbon emissions from the aviation industry has become a hot issue of global interest. After years of development, the global climate governance system has undergone significant changes, the Kyoto Protocol has lost its legal effect, and the 'top-down' emission reduction model established by it has been replaced by the national autonomous contribution model established by the Paris Agreement.

However, ICAO still promotes the 'top-down' model for carbon emission reduction in international aviation. This mode of emission reduction is oriented by collective goals, with resolutions and international standards as binding means, and promotes carbon reduction and mitigation in international aviation through technical goals and technical standards, while establishing the market-based CORSIA mechanism to help aircraft operators offset carbon emission increments through the market mechanism when the technology fails to achieve the emission reduction goals. Under the circumstance that ICAO pushes forward the 'top-down' emission reduction path, more and more countries have joined the CORSIA mechanism.

In conclusion, as the pilot phase of CORSIA is coming to an end, and with the coming of the compliance period, the conflicts between states will continue to intensify, and as the leader of the aviation carbon emission reduction 'package' measures, ICAO has the ability and responsibility to undertake the task of dispute arise under CORSIA.. With the revision of the Rules, ICAO will be able to participate in the cause of global aviation emission reduction in a new way.

Space

From WRC-23 to the Next Cycle:
How to Make Everyone Happy? (Hint: You Can't)
by Sara Dalledonne

From WRC-23 to the next cycle:
How to Make Everyone Happy? (Hint: You Can't)

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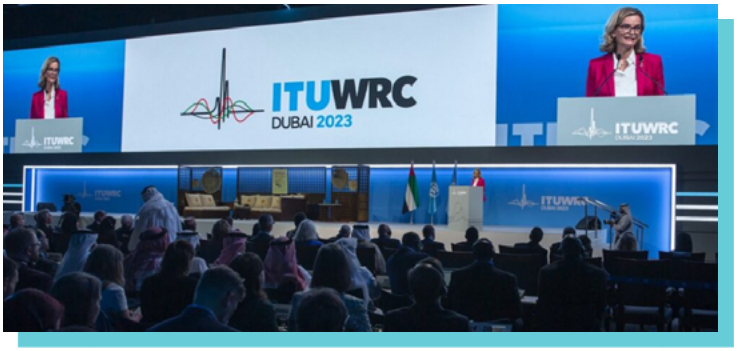
1. An introduction to the World Radiocommunication Conference 2023



ITU WRC-23. Credit: ITU/D. Woldu

The World Radiocommunication Conference 2023 (WRC-23) was held from 20 November to 15 December 2023 in Dubai, UAE [1]. The WRC-23 tackled a number of contemporary and future issues related to spectrum management. Spanning across terrestrial, maritime and space services, dealing with a transition through a "*new era of space development that poses a big challenge for ITU and the international community*" [2]. The Conference gathered approximately 3,900 delegates from 163 Member States, including 88 participants at ministerial level [3]. Participants also included delegates from ITU-R Sector Members, representing international organizations, manufacturers, network operators and industry associations, indicating the breadth of actors impacted by the decisions made.

The WRC is a treaty-making conference organised by ITU that brings together its Member States every three to four years and plays a key role in shaping technical and regulatory frameworks for the provision of radiocommunication services across the globe. Preparations for the WRC-23 included continuous work of the Study Groups of the ITU Radiocommunication Sector (ITU-R), leading to the 2nd Conference Preparatory Meetings (CPM), held from 27 March to 6 April 2023, and the CPM23-2 Report [4]. Among other tasks, the Conference adopts technical studies, revises the Radio Regulations, reviews the Rules of Procedure and appeals from the Radio Regulations Board. The amendments to the ITU Radio Regulations resulted in the WRC-23 Final Acts (an international treaty in its own right) signed by 151 Member States. The Final Acts included the new and revised provisions of the Radio Regulations, all Appendices, and the new and revised Resolutions and ITU-R Recommendations incorporated by reference into the treaty by the Conference. The new Radio Regulation will likely be available in the 4th quarter of 2024 and will enter into force on 1 January 2025.

2. RA 2023: a focus on space sustainability and gender equality

The WRC-23 was preceded by the Radiocommunication Assembly 2023 (RA-23), which took place in the same location as the Conference between the 13 and 17 November 2023 [5]. The Assembly aimed to further shape the future directions in radiocommunication systems. Among other outcomes, RA-23 resulted in the adoption of [6]:

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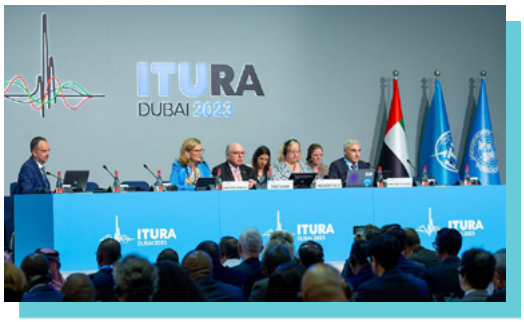
* European Space Policy Institute (ESPI), Research Fellow with the Lead on Regulatory Affairs, Vienna. Link: https://www.espi.or.at/briefs/from-wrc-23-to-the-next-cycle-how-to-make-everyone-happy-hint-you-cant/ https://www.espi.or.at/briefs/from-wrc-23-to-the-next-cycle-how-to-make-everyone-happy-hint-you-cant/.

1 See ITU WRC-23, (Link).
2 ITUPP. 2022. "Highlights: ITU Plenipotentiary Conference 2022". ITU (Link).
3 Press release ITU, 2023. "World Radiocommunication Conference revises the ITU Radio Regulations to support spectrum sharing and technological innovation" (Link)
4 CPM23-2 (Link). Also, consolidated positions along regional approaches were reached by the six regional telecommunication organisations (RTOs).
5 See ITU RA-23, (Link).
6 Press release ITU, 2023. "ITU Radiocommunication Assembly sets agenda for development of IMT-2030 for 6G and sustainable use of spectrum and orbital resources" (Link).

- Resolution 74 on "*Activities related to the sustainable use of radio-frequency spectrum and associated satellite-orbit resources used by space services*" [7]. In 2022, the ITU Plenipotentiary Conference in Bucharest, adopted Resolution 219, directing the Radiocommunication Assembly "*as a matter of urgency*" to perform studies on "*the issue of the increasing use of radio-frequency spectrum and associated orbit resources in non-GSO orbits and the long-term sustainability of these resources, as well as on equitable access to, and rational and compatible use of, the GSO and non-GSO orbit and spectrum resources, consistent with the objectives or Article 44 of the Constitution*." In response to Resolution 219, Resolution 74 facilitates the long-term sustainable use of radio-frequency spectrum and associated satellite orbit resources used by space services. In addition, in March 2024**,** the ITU Radiocommunication Bureau issued a Circular Letter requesting national administrations and operators of non-GSO satellite systems to provide information related to post-mission disposal strategies, de-orbit timetables, enabling technologies including manoeuvrability capabilities, and direct point-of-contact for operations [8]. The ITU committed to promote and share data on responsible behaviours for non-GSO space stations using frequency assignments currently recorded in the ITU MIFR, or under coordination or notification processes [9].

- Resolution 73 on "*the use of International Mobile Telecommunications* (IMT) *technologies for fixed wireless broadband in the frequency bands allocated to the fixed service on a primary basis*" [10]. The Resolution will guide the development of standards and radio interface technologies for the 6th Generation of mobile systems (6G). The resolution was combined with the publication of Recommendation ITU-R M. 2160 on the "IMT-2030 Framework", which sets the basis for the development of IMT-2030. The next phase will be the definition of relevant requirements and evaluation criteria for potential radio interface technologies (RIT). RA-23 also revised ITU-R Resolution 65, paving the way for studies on the compatibility of current regulations with potential 6G radio interface technologies for 2030 and beyond [11]. In this context, the rising need to better integrate space and terrestrial networks effectively, are demonstrated by the recent inclusion of non-terrestrial networks in standardisation documents for standards bodies such as the 3rd Generation Partnership Project (3GPP) and the ITU [12].

- Resolution 72, "*Promoting gender equality and equity and bridging the contribution and participation gap between women and men in ITU-R activities*" [13]. Incentivised by the WRC-19's "*Declaration on Promoting Gender Equality, Equity and Parity in the ITU Radiocommunication Sector*" [14], the Resolution focuses on gender equality "*to strengthen, accelerate and widen the active involvement of women in the work of the ITU-R*" [15]. This year, women made up 22% of all delegates at WRC-23, an insufficient increase from 18% at WRC-19 in 2019. The Resolution was supported by the Network of Women for WRC-23



Ra-23. Credit: ITU/D.Woldu

7 Resolution ITU-R 74, 2023. "Activities related to the sustainable use of radio-frequency spectrum and associated satellite-orbit resources used by space services" (Link)
8 BR Circular Letter (Link)
9 Linkedin, 2024. Jorge Ciccorossi (Link)
10 Resolution ITU-R 73, 2023. "Use of International Mobile Telecommunications technologies for fixed wireless broadband in the frequency bands allocated to the fixed service on a primary basis" (Link).
11 Press release ITU, 2023. "ITU Radiocommunication Assembly sets agenda for development of IMT-2030 for 6G and sustainable use of spectrum and orbital resources" (Link).
12 ITU. 2015. "Handbook on National Spectrum Management". ITU (Link)
13 Resolution ITU-R 72, 2023. "Promoting gender equality and equity and bridging the contribution and participation gap between women and men in ITU-R activities" (Link).
14 "Declaration on Promoting Gender Equality, Equity and Parity in the ITU Radiocommunication Sector of the World Radiocommunication Conference" (Sharm el-Sheikh, 2019) (Link).
15 The duties and functions of the Radiocommunication Assembly are defined in Article 13 of the Constitution and Article 8 of the Convention (Link), while the working methods of the Assembly are described in § A1.2 of Resolution ITU-R 1-8 (Link).

(NOW4WRC23), a forum for networking, mentoring, and knowledge sharing, launched during the ITU World Radiocommunication Seminar Online 2020 Plenary, in December 2020.

- Conclusion of Recommendation ITU-R M.2164-0 on the protection of the radionavigation-satellite service (RNSS, space-to-Earth) from the use of some frequency by stations operating in the amateur and amateur-satellite service[16]. WRC-23 participants agreed to mention the Recommendation in a new footnote for the allocation [17].

3. A continued clash between terrestrial and space: Satellite services at WRC-23

WRC-23 approved 43 new resolutions, revised 56 existing ones, and suppressed 33. Among the 10 Agenda Items with over 20 subpoints and several topics, of which the following are deemed most relevant for the space community [18]:

Allocation of spectrum for satellite services

The WRC-23 allocated new frequencies (117.975-137 MHz) to the aviation sector for aeronautical mobile satellite services, aiming to improve bi-directional communication via non-GSO satellite systems, especially over remote areas and the ocean [19]. In addition, frequencies ranging from 40-50 MHz have been allocated to the Earth exploration-satellite service (active) for spaceborne radar sounders to enable advanced ice cloud measurements for better weather forecasting and climate monitoring [20]. Moreover, WRC-23 acknowledged space weather sensors as integral to the meteorological aid service, facilitating the observation of space weather phenomena and events such as solar flares, solar radiation, and geomagnetic storms. These phenomena can disrupt radiocommunication services, including satellites, mobile phone services, and navigation systems, also in line with the newly introduced Article 29B of the Radio Regulations[21]. Given that spectrum is a finite asset, these additional allocations will be pivotal in shaping space and satellite operations in the coming years [22]. In addition, several countries replaced their assignment in the broadcasting satellite service with a new one offering better performances [23].

The expansion of mobile services allocation at the expenses of satellite services

The Final Acts allocate frequencies for Mobile Service (MS 3 600-3 800 MHz) at the expense of Fixed Satellite Service (FSS) Earth stations, especially in African regions [24], and explored the use of IMT system for fixed wireless broadband in the frequency bands allocated to the fixed service on a primary basis [25]. The Acts recognize spectrum as a crucial enabler for the development of mobile service and IMT (e.g., 4G, 5G and, in the future, 6G), including the 3 300-3 400 MHz and 3 600-3 800 MHz [26], 4 800-4 990 MHz [27] and 6 425-7 125 MHz frequency bands in various countries and regions (6 425-7 125 MHz in Region 1 and 7 025-7 125 MHz in Region 3). WRC-23 also outlined the frequency bands (2 GHz and 2.6 GHz) for using "*high-altitude platform stations as IMT base stations*" (HIBS) and established provisions for their

16 Recommendation ITU-R M.2164-0 (11/2023) (Link).
17 International Amateur Radio Union, 2023. "WRC-23 Outcome" (Link).
18 Press release ITU, 2023. "World Radiocommunication Conference revises the ITU Radio Regulations to support spectrum sharing and technological innovation" (Link). The 10 Agenda Items (AI) were addressed by Commissions 4, 5 and 6 with 19 subpoints under AI 1, 11 topics under AI 7 and 3 subpoints under AI 9.
19 Resolution 428, WRC-23, AI 1.7, 2023. (Link).
20 Resolution COM5/6, WRC-23, AI 1.12, 2023. (Link).
21 Resolution COM5/1, WRC23 AI 9.1, 2023. (Link).
22 SpaceNews, "Spectrum for the Space and Satellite Industry" (Link).
23 Resolution 559 (WRC-19), 2019. (Link).
24 WRC-23, AI 1.3, 2023. (Link).
25 Resolution 175, WRC-23, AI 9.1-c, 2023. (Link).
26 WRC-23, AI 1.2, 2023. (Link).
27 WRC-23, AI 1.1, 2023. (Link).

operations [28]. This technology presents a platform for providing mobile broadband with limited/minimal infrastructure, relying on the same frequencies and devices as IMT mobile networks. Indeed, when deploying ground stations becomes challenging, inter-HIBS or HIBS-satellite links may be used for this purpose.

Upgrading satellite-to-satellite links

Following studies conducted in the WRC-19 study cycle pursuant to Resolution 773, WRC-23 also focused on the adoption of a regulatory framework for satellite-to-satellite links in Ka-band [29]. Indeed, levering satellites in higher orbits (GSO and MEO assets) as data relay links can provide space infrastructures and systems in LEO (e.g., space stations and EO) an alternative means to transmit the data to the ground. This advancement will enable the availability of data in near-real time, thereby enhancing the value of instrument data for low-latency applications, including scientific use, weather forecasting and disaster risk reduction. The participants of WRC-23 agreed on the use of the frequency bands 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, with a limited use for 'space research, space operation and/or Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space'. They also included an extension to 29.5-30 GHz to ensure the protection of terrestrial services, with further considerations for NGSO systems with operational altitudes of 900 km and for GSOs used in the fixed-satellite service [30].

Regulation of earth stations in motion (ESIM) bands to enhance mobility

The growing need for connectivity of earth stations in motion (ESIM), especially in the aeronautical and maritime sectors, has been the core of the discussions regarding Agenda Items 1.15 and 1.16. WRC-23 adopted regulatory decisions for ESIM communicating with non-GSO satellite systems in the Ka-band as well as with GSO in parts of the Ku-band, supporting ubiquitous connectivity via satellite frequencies to deliver high-speed broadband onboard aircraft, vessels, trains, and vehicles. These services are decisive for disaster management purposes, especially in situations where terrestrial infrastructures are damaged or destroyed, and they could also play a significant role in enhancing the Global Maritime Distress and Safety System. The Conference took several regulatory actions in this regard, including the provisional recognition of the BeiDou Satellite Messaging Service System for GMDSS use [31], contingent upon the accomplishment of coordination with existing networks.

Enhancement of satellite procedures and revision of planned bands

Based on Resolution 86 (Rev. Marrakesh, 2002), Agenda Item 7 aimed changes in advance publication, coordination, notification and recording procedures for frequency assignments of satellite networks to facilitate the rational, efficient, and economical use of radio frequencies and any associated orbits, including the GSO. A relevant point of discussion under this Agenda Item regarded non-GSO tolerance, meaning how close non-GSO satellites should adhere to the orbital positions which are registered by their national regulators. The parameters are important, especially for satellite operators attempting to navigate the increasingly congested space environment. Indeed, non-GSO satellites have been operational for decades, but they did not have similarly specified orbital tolerances limitation as GSO satellites do (0.5 degrees of an assigned orbital slot). The WRC-23 regulated the tolerances on apogee/perigee and inclination parameters for frequency assignments with an orbital eccentricity less than 0.5, and an apogee altitude of less than 15,000 km notified as part of a non-GSO FSS, BSS, or MSS system (WRC-23, Resolution 35) [32]. The Resolution established a limit of 70 km above or below an assigned orbital slot during the deployment of the constellation, decreasing to 30 km thereafter [33].

28 WRC-23, AI 1.4, 2023. (Link).
29 WRC-23, AI 1.17, 2023. (Link).
30 Resolution COM5/8, WRC-23, AI 1.17, 2023. (Link)
31 Resolution COM4/5, WRC-23, AI 1.11, 2023. (Link).
32 SpaceNews, 2024. "Orbital Spectrum Clash" (Link).
33 AccessPartnership, 2024. "The future of the ITU WRC cycle: Keeping pace with technological progress" (Link).

Furthermore, an instance of these new complexity factors brought by large constellations in non-GSO can be found in WRC-23 discussions related to the limits on the overall power that large constellations can emit when communicating with ground terminals (Equivalent Power Flux-Density, EPFD), so as to protect GEO fixed-satellite and GSO broadcasting-satellite services from interference. The matter was addressed under Agenda Item 7, topic J, with the aim of establishing a procedure for collaboration among administrations in ensuring the aggregated EPFD limits are not exceeded. The discussion was not conclusive; and highlighted a schism between non-GSO and GSO operators.

Indeed, non-GSO satellite operators put pressure on the participants to adopt a WRC-27 Agenda Item focused on studying and eventually updating the EPFD rules. On the contrary, GEO operators and some countries strongly opposed the adoption of such a future Agenda Item [(34)]. As a consequence, EPFD limits (and modification of Article 22) are not an Agenda Item for WRC-27, however, technical studies will be conducted in the next four-year cycle, and the outcomes will be reported at WRC-27 (without regulatory actions).

4. On the road to WRC-27: an unprecedented number of proposals related to space

The WRC-23 tackled several critical issues shaping the future of spectrum management for space services, while an even broader analysis requires the identification of Agenda Items for WRC-27. Indeed, the WRC Agenda results from the decisions made by previous WRCs. Its final version is approved by the Council of the ITU. WRC-23 approved the Agenda Items for the next WRC-27 and the provisional Agenda for WRC-31. WRC-27 Agenda will have 19 items under Agenda Items 1, also for both WRC-27 and preliminary ones for WRC-31, with an unprecedented number of proposals related to the space domain:

Expand Q/V frequency bands for ESIMs (GSO/ non-GSO)	Consideration for technical and operational conditions for the use of Q/V band by aeronautical and maritime ESIMs communicating with GSO and non-GSO space stations in the FSS and development of regulatory measures to facilitate their use with ESIMs on board unmanned aircraft [(1)].
Small Antennas in Ku frequency Band:	Consideration for revisions of sharing conditions in the frequency band 13 .75-14 GHz to allow the use of uplink FSS earth stations with smaller antenna sizes.[2] Furthermore, the WRC-27 will consider the use of Q/V frequency band (51.4-52.4 GHz) to enable use by gateway earth stations transmitting to non-GSO satellite orbit systems in FSS (Earth-to-space) [(3)].
Ka-Band BSS/FSS Allocation in R3	Considerations for new primary allocation to FSS (space-to-Earth) in the frequency band 17.3-17.7 GHz and a possible new primary allocation to the BSS (space-to-Earth) in the frequency band 17.3-17.8 GHz in Region 3, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, and considering EPFD limits to be applied in Regions 1 and 3 to non-GSO systems in FSS (space-to-Earth) in the frequency band 17.317.7 GHz [(4)].
Unauthorised Operation of non-GSO	Consideration for regulatory measures, and implementation thereof, to limit the unauthorized operations of non-GSO orbit earth stations in FSS and MSS and associated issues related to the service area of non-GSO orbit satellite systems in FSS and MSS [(5)].
Equitable Access in Q/V Bands	Consideration for technical and regulatory measures for FSS satellite networks/systems in the frequency bands 37.5-42.5 GHz (space-to-Earth), 42.5-43.5 GHz (Earth-to-space), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) to ensure equitable access [(6)].

34 ViaSatellite, 2023. "Amazon and Think Tanks Launch Group Advocating for Power Flux Density Changes" (Link).

Additional spectrum for IMT (inc. MSS)	Consideration for sharing and compatibility, as well as the development of technical conditions for the use of IMT in the frequency bands 4 400-4 800 MHz, 7 125-8 400 MHz (or parts thereof), and 14.8-15.35 GHz taking into account existing primary services operating in these, and adjacent, frequency bands [7]. Furthermore, WRC-23 considered possible allocations to MSS for direct connectivity between space stations and IMT user equipment to complement terrestrial IMT network coverage [8].
EPFD for FSS, MSS, and BSS	Consideration for developing power fluxdensity and equivalent isotropically radiated power limits for inclusion in RR Article 21 for FSS, MSS, and BSS to protect the fixed and mobile services in the frequency bands 71-76 GHz and 81-86 GHz [9].
Space-to-space links among non-GSO and GSO	Consideration for technical and operational issues, and regulatory provisions, for space-to-space links among non-GSO and GSO satellites in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz allocated to MSS [10].
MSS low data rate in S-band	Considerations for possible allocations to MSS and regulatory actions in the frequency bands 1 427-1 432 MHz (space-to-Earth), 1 645.5-1 646.5 MHz (space-to-Earth) (Earth-to-space), 1 880-1 920 MHz (space-to-Earth) (Earthto-space) and 2 010-2 025 MHz (space-to-Earth) (Earth-to-space) required for the future development of low-data-rate non-GSO MSS. WRC-27 also considers possible additional allocations to MSS in S-band [11].
Lunar Spectrum allocation	Considerations for frequency-related matters, including possible new or modified space research service (space-to-space) allocations, for future development of communications on the lunar surface and between lunar orbit and the lunar surface [12].
Protection of Radio astronomy in Radio Quiet Zones	Consideration for technical and regulatory provisions necessary to protect radio astronomy operating in specific Radio Quiet Zones and, in frequency bands allocated to the radio astronomy service on a primary basis globally, from aggregate radio-frequency interference caused by non-GSO systems. [13] Also, WRC-27 will consider possible regulatory measures regarding the protection of the Earth exploration-satellite service (passive) and the radio astronomy service in certain frequency bands above 76 GHz from unwanted emissions of active services [14].
Protection of space weather sensors	Considerations for regulatory provisions for receive-only space weather sensors and their protection in the Radio Regulations, taking into account the results of ITU Radiocommunication Sector studies [15].
Frequencies for EESS	Considerations for possible primary allocations in all Regions to the Earth exploration-satellite service (EESS, passive) in the frequency bands 4 200-4 400 MHz and 8 400-8 500 MHz [16].

Footnotes

1 Resolution 176, WRC.27 AI 1.1 (for 47.2-50.2 GHz and 50.4-51.4 GHz, Earth-to-space), 2023. (Link)
2 Resolution 129, WRC-27, AI 1.2, 2023. (Link)
3 Resolution 130, WRC-27, AI 1.3, 2023. (Link)
4 Resolution 726, WRC-27, AI 1.4, 2023. (Link)
5 Resolution 14, WRC-27, AI 1.5, 2023. (Link)
6 Resolution 131, WRC-27, AI 1.6, 2023. (Link)
7 Resolution 256, WRC-27, AI 1.7, 2023. (Link)
8 Resolution 253, WRC-27, AI 1.13, 2023. (Link)
9 Resolution 775, WRC-27, AI 1.10, 2023. (Link)
10 Resolution 249, WRC-27, AI 1.11, 2023. (Link)
11 Resolution 252, WRC-27, AI 1.12, 2023. (Link)
12 Resolution 680, WRC-27, AI 1.15, 2023. (Link)
13 Resolution 681, WRC-27, AI 1.16, 2023. (Link)
14 Resolution 712, WRC-27, AI 1.18 2023. (Link)
15 Resolution 682, WRC-27, AI 1.17, 2023. (Link)
16 Resolution 674 WRC-27, AI 1.19, 2023. (Link)

Finally, the RA23 revised Resolution ITU-R 5-8 established the framework for the activities for the Radiocommunication Study Groups in the upcoming four-year study period (2024-2027).

5. What is at stake for space?

WRC-27 will likely bring a series of new frequency allocations and regulatory actions that would benefit the space domain, including, among many others, the future development of low-data rate non-GSO mobile-satellite systems.

The impending time for satellite direct-to-device communication

In conjunction with the WRC-23, the U.S. Federal Communications Commission (FCC) issued an experimental special temporary authorization to SpaceX to test the direct-to-cell calls of the Starlink system. This six-month authorization will enable SpaceX to transmit data to unmodified devices on Earth using T-Mobile's spectrum over the 1910-1915 and 1990-1995 MHz radio bands [35]. Significant development is expected regarding direct connectivity between space stations and IMT user equipment, where new allocations to MSS could radically evolve direct-to-device communication, complementing terrestrial mobile services with space services. This indicates a contrasting trend in respect to the C-band relocation for 5G rollout in the United States. Inevitably, this trend poses challenges to the effectiveness of regulatory frameworks and underscores the necessity to timely consider an evolution of the Radio Regulations to keep up with technological innovation. As an instance of such an evolution, many administrations worldwide suggested the need to impose some restrictions on the increasing use of the provision under the Radio Regulation which permits limited operation for commercial applications of any radio station without completing the necessary procedures. RR Article 18.1 regarding unlicensed operation is reflected in the introduction of the new Agenda Item 1.5 for WRC-27. RR Article 4.4 related to uncoordinated operations is addressed under Agenda Item 7.

The coexistence and complementarity of space-based and terrestrial networks

On the contrary, the mobile community exerted its influence over the largest information technology companies, with WRC-23 identifying the 6 GHz band for IMT, expanding beyond the initial focus of the original Agenda Item on Region 1 to Regions 2 and 3. This decision hindered Big Tech's ambitions to secure 1,200 MHz of consistently harmonized spectrum in the Western regions (and potentially worldwide), for unlicensed use, primarily designated for Wi-Fi. In the upcoming WRC-27, IMT might be proposed as an initial step, as Agenda Item 1.7 examines bands that are generally less contentious.

Nevertheless, the ongoing study includes a segment of the Ku-band extensively utilized by satellites and the 7 GHz band, adjacent to the recently designated 6 GHz, which could lead to further debates involving the Wi-Fi community. In addition, national administrators (especially, from developing countries) increasingly acknowledged a role for them in the space domain, yet they must proactively secure their position, and their sovereign interest, ensuring space is not dominated by a select few public and private actors. This is reflected also in the debate on the need for equitable access to the relevant frequency bands, for which the discussion will start at WRC-27 under Agenda Item 1.6.

A way forward for space sustainability

Large non-GSO constellations are posing a number of unique challenges for the national regulatory processes, as well as for the international space regime at large. While many progresses have been made during WRC-27, achieving a sustainable space environment necessitates worldwide collaboration and resource sharing at the intergovernmental level under the auspices of the UN. UNOOSA, ITU, as well as bodies outside the UN system (e.g. the Inter-Agency Space Debris Coordination Committee - IADC) that deal with space sustainability, while also taking advantage of civil society and advocacy groups as an integral part of this ecosystem. While these entities will continue to operate under differ-

35 PCMag, ´FCC clears SpaceX to test cellular Starlink on phones´, 2023. (Link).

ent mandates and in different institutional setups, an effective space sustainability international coordination scheme and collaboration between different regulators can ensure some best practices being taken forward to enhance and reinforce the effectiveness of the respective regimes, and, more generally, the broader outer space governance. After several policy documents in this direction, including the UN Secretary-General Policy Brief N°7 [36], the ITU PP Resolution 219 and ITU-R Resolution 74 (RA 2023) [37], a clear opportunity to enhance outer space governance is provided by the UN Summit of the Future in 2024 [38].

A call for protection of national interests

National administration also raised concerns on situations where services are provided within their country without authorization, controversial to the sovereign right to regulate telecommunications within their territory, and to their regulatory frameworks. This led the ITU Radio Regulations Board to request on 8 March that U.S. and Norwegian regulators "*take immediate action to disable (authorized) Starlink terminals*" in Iran, after multiple solicitations by Iran's Communications Regulatory Authority [39].

Finally, a focus on consolidating and strengthening national regulatory framework is highlighted by the release of the National Spectrum Strategy by the Department of Commerce [40], and the publication by the White House of its mission authorization plan for novel space activities, simultaneously with the RA.23 and WRC-23 [41]. Developing countries also called the ITU to provide a supporting role for their national space laws, guaranteeing that operations are taking place with consensus and authorization [42].

6. Europe within and beyond the WRC environment

WRC-23 tackled several critical issues shaping the future of spectrum management for space services, while an even broader analysis will be required in the next 4-years study cycle. Firstly, European Member states will need to deploy continued R&D support and future-driven regulatory frameworks for satellite direct-to-device communication, to ensure Europe doesn't fall further behind in today's fast paced connectivity race. In this context, it is also fundamental to establish a solid and balanced regulatory approach for complementing terrestrial with non-terrestrial networks, also in view of aspects related to European data sovereignty.

The 2023 edition also further established the WRC as a front where different industries vie for influence and economic power in future connectivity markets. With space-based connectivity poised to grow, operators as well as European space policy makers need to ensure more attention and resources are devoted to the decisions at the WRC and policy milestones in-between the conferences.

In this context, a crucial role will continue to be played by the Electronic Communications Committee (ECC), the European Conference of Postal and Telecommunications Administrations (CEPT), and the Radio Spectrum Policy Group (RSPG).

Finally, Member States will be increasingly challenged with establishing a consistent approach to space sustainability throughout relevant governmental and non-governmental fora as national actors sitting around the various platforms discussing and driving developments span across different governmental departments and ministries.

36 UN. 2023. "Our Common Agenda Policy Brief 7: For All Humanity – The Future of Outer Space Governance". (Link).
37 Resolutions, RA-23 (Link).
38 UN. 2023. "UN Summit of the Future in 2024". (Link).
39 Space Intel Report, 'ITU board rejects US, Norwegian claims that SpaceX Starlink cannot geolocate its terminals in Iran', 2024 (Link).
40 National Telecommunications and Information Administration, 2023. "National Spectrum Strategy" (Link).
41 White House, 2023. "United States Novel Space Activities Authorization and Supervision Framework" (Link).
42 ViaSatellite, 2023. "Satellite Issues Take Center-Stage at WRC-23" (Link).

Additional information on these topics can be found in the ESPI Report "*Space Spectrum Management: Foundations for an informed policy discussion towards WRC-23 and beyond*" [43].

43 ESPI, 2023. "Space Spectrum Management: Foundations for an informed policy discussion towards WRC-23 and beyond" (Link).

Miscellaneous Material of Interest

Space Opportunities in Milan, Italy: the International Astronautical Congress 2024
by Luisa Santoro

International Astronautical Congress (IAC) 2023
by Luisa Santoro & Virginia Achenza

Space opportunities in Milan, Italy: The International Astronautical Congress 2024

by Luisa Santoro*

Abstract

The International Astronautical Congress (IAC) is an international conference dedicated to the space sector which every year convenes space stakeholders in order to discuss state-of-the-art scientific-technological innovations, the latest stages of outer space exploration, any ensuing economic developments, as well as space-related topincs and policies. After having hosted it 4 times in the past, Italy – and, in particular, the city of Milan – will again be the seat of the Congress this year. This article illustrates the reasons for Italy's candidature and nomination as host of the 2024 edition of the IAC.

1. The International Astronautical Congress

The International Astronautical Congress (IAC) is an international conference dedicated to the space sector which every year convenes political decision-makers, heads of international space agencies, industry managers, scientists, experts, students and any other players involved in outer space, in order to discuss state-of-the-art scientific-technological innovations, the latest stages of space exploration, any ensuing economic developments, as well as space-related topics and policies.

The conference is organized by the International Astronautical Federation-IAF[1] – together with the International Academy of Astronautics (IAA), the local Space Agency or bodies of the host country, local authorities and other partners such as the International Institute of Space Law (IISL) and the Space Generation Advisory Council (SGAC); it is usually hosted by one of the national members of the IAF and consists of plenary sessions, lectures, meetings and exhibitions.

The IAC usually takes place for a week in a different country, alternating European and non-European locations. Just to get an idea of the size of the Conference, let's consider, for instance, the IAC held in Washington D.C., United States, in 2019: it was attended by more than 6600 delegates from 80 countries, with an opening ceremony marked also by the presence of former US Vice President Mike Pence (see fig. 1).

2. The International Astronautical Congress and Italy

Italy already hosted the IAC 4 times in the past: in Rome, in 1956 (the 7th); again in Rome, in 1981 (the 32nd); in Turin, in 1997 (the 48th, inaugurated by the President of the Italian Republic) and in Naples, in 2012 (the 63rd).

Combined with an exhibition located in three of the pavilions of the Mostra d'Oltremare [2], the Naples edition was organized by the IAF in collaboration with the Italian Space Agency-ASI (IAF), the Italian Center for Aerospace Research (CIRA), the High-Tech Center of Naples, the Ministry of Education, University and Research and the main local authorities - from the Municipality of Naples to the Campania Region, the Province of Naples and the local Chamber of Commerce - counting approximately 3,300 participants from the space sector, who represented 83 countries; it was also characterized by a high number of students - around 30% of the total participants [3] - who, for the first time ever, were admitted to the Conference.

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* Italian Space Agency - International Affairs Directorate, Head of Bi- and Multi-lateral Relations with EU Countries Office. The opinions expressed in this article are purely the views of the author, and thus may not in any circumstances be regarded as an official position of the institution the author belongs to.

1 "*Founded in 1951, the International Astronautical Federation is the world's leading space advocacy body with 513 Members from 78 countries, including all leading space agencies, companies, research institutions, universities, societies, associations, institutes and museums worldwide.*" (https://www.iafastro.org/about/history-and-missions.html).

2 The Mostra d'Oltremare is the largest space for trade fairs, conferences of all sizes and music and theater shows in Naples.

3 ASI website, editorial of 11 October 2021.

Fig. 1: Vice President Mike Pence launches the 2019 International Astronautical Congress Opening Ceremony on 21 October, at the Walter E. Washington Convention Center in Washington, D.C. (Official White House photo by D. Myles Cullen).

The IAC in Naples was also the venue chosen by the International Astronautical Federation to launch one of its most successful initiatives which has taken place every year since then: the Global Networking Forum, i.e. a global platform aimed at a wide range of space actors - from students and young professionals to academicians, policy makers, the general public and anyone contributing to knowledge sharing in the international space community – and that, with the motto "*Meet.Share.Connect*", promotes mutual collaboration, in a constant and continuous process of development and integration that extends to research institutions and the industrial sector.

3. The IAC and the reasons for Italy's candidature and nomination as host of the 2024 edition

The International Astronautical Congress has always attracted thousands of participants, and, by covering all of the scientific-technological, academic and industrial issues related to outer space, it offers everyone - professionals and non-experts, public users and citizens – information, updates and prospects regarding each respective main topic of interest, while also stimulating contacts, creating opportunities for potential networking and partnerships, and igniting discussions and new ideas.

It is, therefore, one of the most prestigious and important events for the global (space) economy and for debating on research and innovation in the aerospace sector, i.e. it is a week of both specific or more general thematic meetings; a real showcase, a unique opportunity for the valorisation and/or the promotion of our country's scientific-technological and industrial expertise in the space field, as well as a place providing the opportunity to discover "*Made in Italy*" aerospace products and knowhow.

And, last but not least, the IAC is an event fully consistent with the Italian government's political and industrial strategies, which include:

- in general, the valorisation of national resources and, more specifically, of the technological supply chains of the space sector: one of the most advanced sectors in the world, which is composed of around 300 companies specifi-

cally involved in the space field[4] (80% of which are SMEs) , 7 thousand employees and an annual turnover of 2 billion euros[5]": which makes Italy the third country in Europe and the sixth in the world for spending on the Space Economy compared to its GDP[6];

- promoting the development and use of space technologies and applications;
- the attraction of private capitals, so as to contribute to the redefinition of the public/private relationship, in a competitive scenario in which the strategic interests of superpowers are now increasingly centered and pursued with the main players of the private sector on the commercial and technological axis, and less and less on the traditional approach to geopolitical competition;
- closer international collaborations: especially at the European level, an edition of the IAC (once again) in the heart of Europe - after the one in Paris in 2022 - could mark "*a further step forward towards a more complete European identity on the international scene*"[7], particularly in a historical moment in which "*the future will be more than ever based on the relations between powers*"[8];
- being part, at the highest institutional levels, of all international organizations involved in the sector.

In addition, the best services for both common citizens and entrepreneurs are rooted in outer space: the space industrial sector interacts with multiple and very different fields, such as logistics, medicine, financial services and even the public administration. The International Astronautical Congress, therefore, also represents an opportunity to show to the end-users the complexity of the technological integration underlying the space products and applications they benefit from, thus also stimulating companies and start-ups of the non-space sectors that could be interested in the development and use of space-enabled services and applications.

Finally, thanks to a program including a great number of activities also aimed at students and young professionals, the International Astronautical Congress contributes to inspiring and generating new talent, promoting the workforce of the future that will be central to the aerospace revolution already underway. Today, space is widely present in our daily life through essential services - from telecommunications to connectivity, navigation, etc.-, and represents one of the fundamental tools available to humanity for achieving the sustainable development goals of the 2030 Agenda of the United Nations, as well as for facilitating the creation of a circular and efficient production system, the success of which will be increasingly dependent on the presence, in each national system, of highly-qualified employees, on the one hand, and, on the other, on a "*space top-management*" capable of anticipating innovation.

In addition to aiming at the involvement of young generations, within the framework of promoting the principles of diversity characterized by the so-called "3G" (geography, generation, gender) approach, the IAC also aims at involving new countries and communities, pursuing a balanced and fully inclusive composition not only among the speakers and authors of the Conference itself, but also in the global space community, with the motto - in compliance with the principles of diversity and equality, and under the aegis of the International Astronautical Federation: "*Connecting @ll Space People*".

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4 Led by he National Aerospace Technological Cluster - the CTNA - there are 15 regional aerospace districts in Italy: ART-ER Attrattività Ricerca Territorio (Emilia-Romagna) www.art-er.it; CLAS – Cluster Lucano dell'Aerospazio clusterlucanoaerospazio.it; CO.SI.MO (Veneto); DAC – Distretto Tecnologico Aerospaziale della Campania www.daccampania.com; DAP – Distretto Aerospaziale Piemonte www.distrettoaerospazialepiemonte.com; DASS – Distretto Aerospaziale Sardegna www.dassardegna.eu; Dominio ICT/Aerospazio Abruzzo; DTA – Distretto Tecnologico Aerospaziale Scarl www.dtascarl.org; EXPLOORE (Marche) www.explooremarche.it; GATE 4.0 Distretto Tecnologico Aerospaziale della Toscana www.distrettogate40.it; IR4I Cluster Tecnologico Aerospaziale Emilia Romagna www.ir4i.it; Lazio Innova Spa www.lazioinnova.it; Lombardia Aerospace Cluster www.aerospacelombardia.it; SIIT – Distretto Tecnologico Ligure sui Sistemi Intelligenti Integrati www.siitscpa.it; Umbria Aerospace Cluster www.umbriaerospace.com (see https://www.ctna.it/soci/).

5 https://www.mise.gov.it/index.php/it/198-notizie-stampa/2041625-presentata-pubblicazione-sull-industria-italiana-dello-spazio

6 "*La space economy in Italia vale un miliardo di fatturato*", Il Sole 24 OreOECD – 18 May 2023.

7 "*Il nuovo mondo secondo Putin*" (G. Massolo, La Stampa on 28/01/2021)

8 Ib.

A final concluding note concerns the year 2024[9], when Italy will celebrate "*the 60th anniversary of the launch of the first Italian satellite, the San Marco 1, thanks to which Italy is counted as the third country in the world, and the first in Europe, to launch a satellite*"[10]. And, since sixty years after the launch of San Marco 1, Italy is still one of the leading countries in space exploration and service, hosting the IAC 2024 would provide the Country with a privileged opportunity to celebrate both historical national achievements.

So, during the IAC2022, the above considerations led the IAF General Assembly to choose Italy, and in particular the city of Milan, as host of the 75th edition of the Congress, whereas the IAC 2023 that was held in Baku – Azerbaijan - in the first half of October was also the occasion for announcing that it will take place from 14 to 18 October 2024, hosted by the Associazione Italiana di Aeronautica e Astronautica-AIDAA[11] and co-hosted by the Italian Space Agency-ASI and Leonardo[12]: "*Milan was selected over other important candidate cities such as Budapest (Hungary), São Paulo (Brazil), Seville (Spain) and Adelaide (Australia) by more than 400 delegates from the 71 countries constituing the International Astronautical Federation's General Assembly, which gathered in Dubai from 25th to 29th October at the 72nd edition of the IAC.*"[13].

4. The IAC 2024

Fig. 2: the IAC 2024 banner (Credits: International Astronautical Federation)

The motto chosen for the IAC 2024 is "*Responsible Space for Sustainability*", and it is aimed at raising awareness in the international community on such a sensitive issue as a conscious and responsible use of the outer space environment: with the increase in the number of missions in orbit and the emergence of large constellations made-up of hundreds of satellites, the risk of collision between objects in outer space is dramatically increasing and leading to the generation of new dangerous space debris; in addition, this could compromise the proper functioning of satellite systems on which many activities of our daily life depend: from telecommunication services to transport, from environmental monitoring to security, etc. However, the IAC 2024 edition will also dwell on themes such as diversity and inclusiveness, since outer space has always been the place where diversity between countries, generations, genders and skills has proved to be crucial for the development, evolution, innovation and knowledge of humanity.

9 https://www.iac2024.org/

10 Erasmo Carrera, President of AIDAA (https://www.iac2024.org/about-iac/iac-2024/).

11 The Italian Association of Aeronautics and Astronautics (AIDAA) is a national not-for-profit scientific association, founded in Rome in 1920 by a group of aeronautical pioneers as the Italian Aerotechnique Association. AIDAA promotes its mission through a number of activities, as well as through the international journal "Aerotecnica Missili e Spazio – Journal of Aerospace Science, Technologies, and Systems (https://www.iac2024.org/about-iac/local-host/).

12 Leonardo group is present in Lombardy with a total of 7000 employees, a figure that includes the two joint ventures Telespazio and Thales Alenia Space. "It is a victory for Milan, for the Lombardy region, for the national space industry and for the entire supply chain. At Leonardo we are particularly proud: we have strongly embraced and supported the candidacy because we believe that the value of Space, where we have been playing a leading role on an international level for years, is fundamental and strategic for the future of technological innovation at the service of the country and its sustainable growth", said Alessandro Profumo, CEO of Leonardo.

13 https://www.iac2024.org/2022/09/15/milan-will-host-the-international-astronautical-congress-iac-in-2024/.

Finally, the IAC 2024 will be hosted by the Milan Congress Center (MiCo), the largest Congress Center in Europe, with a total capacity of 21,000 seats. The complex offers two plenary rooms, respectively with 4,000 and 2,000 seats, and a 1,500-seat auditorium. In addition, the city has solid experience in organising international events – such as, for example, the annual Milan Fashion Week and Expo Milano 2015 – and can count on the efficiency of key services such as the urban transport network, as well as airports and railway lines connecting with the main European and global cities.

Detailed information about invited speakers and the programme are available HERE.

INTERNATIONAL ASTRONAUTICAL CONGRESS-IAC 2023
Baku, Azerbaijan - 2-6 October 2023

By Luisa Santoro* & Virginia Achenza*

Fifty years after the latest edition that took place there, Baku - the capital of Azerbaijani - hosted the 74th edition of the International Astronautical Congress from 2 to 6 October 2023.
Centered on the theme "*Global Challenges and Opportunities: Give Space a Chance*", the Congress brought together high-level officials, space industry professionals, academicians, researchers and students to share knowledge and discoveries on outer space science, technology and exploration. More than forty-six plenary and Global Networking Forum (GNF) sessions were organized and over 2400 technical papers were presented, with highlights that included presentations of new exploration missions to Mars, on advances in exoplanet research and discussions on future lunar colonization projects.

Figure 1: The Baku Convention Complex, where the IAC 2023 was held. Credit: azernews.az.

The Italian Space Agency-ASI, represented by a national delegation headed by President Teodoro Valente, took part in several bilateral meetings with other Space Agencies, including NASA, JAXA, Azercosmos and the Canadian Space Agency. As featured in one specific session (see Fig. 2), Italy will host next year's edition of the IAC, which is scheduled to take place in Milan from 14 to 18 October 2024.

Detailed information about speakers, papers and the programme of the IAC 2023 are available HERE.

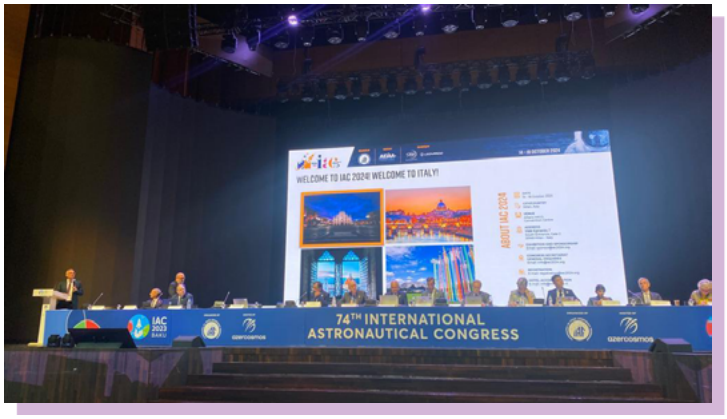


Figure 2: ASI President Teodoro Valente attends the IAF General Assembly. Credit: ASI.

* Italian Space Agency - International Affairs Directorate, Space Diplomacy Department; Bi- and Multi-lateral Relations with European Countries Office.

Events

Challenges and Opportunities of the New Space Economy, Bologna Business School (BBS)
Bologna (Italy), 25/26 October – 15/16 November 2024

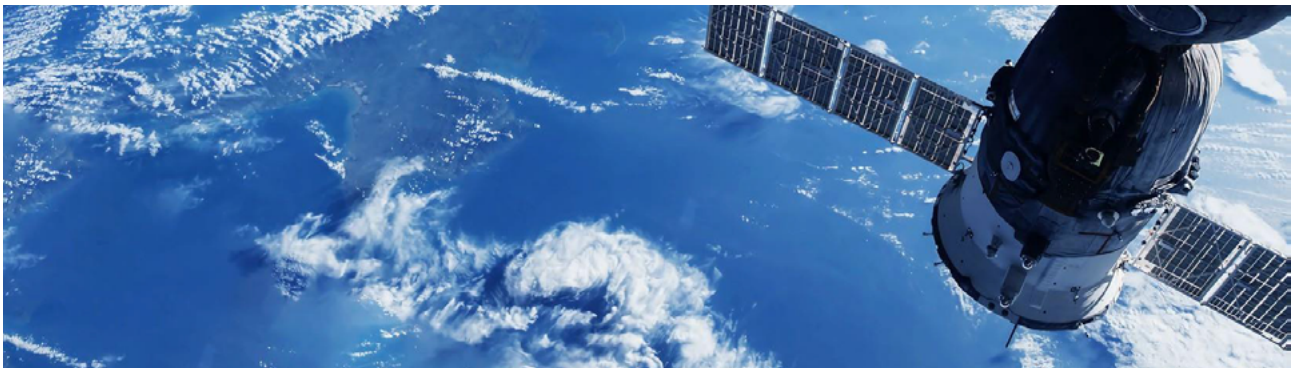
European Air Law Association (EALA) 36th Annual Conference
Barcelona (Spain), 7-8 November 2024

International Conference on Unmanned Aircraft Systems (ICUAS) 2024
Crete (Greece), 4-7 June 2024

Space Summit 2023
Seville (Spain), 6-7 November 2023

Challenges and Opportunities of the New Space Economy, Bologna Business School (BBS)

Bologna (Italy)
25/26 October – 15/16 November 2024



The New Space Economy constitutes one of the most promising and developing perspective of the global economy for next years to come, thanks to the availability of new technologies and the evolution of the aerospace value chain towards other industrial sectors. Italy is the fifth country in the world, and the second in Europe, for investments made in relation to the GDP of the New Space Economy.

The central role of public and private fundings linked to the New Space Economy represents a crucial source for the development of space and and satellite infrastructures.

The Open Program on Challenges and Opportunities of the New Space Economy represents a training program of high education aiming at maximizing the participants' business impact, supporting personal and professional competences to identify and intercept commercial opportunities associated to the satellite technologies and the use of space.

"The program aims at strengthening the professional skils and competences in the aerospace sector, in those industries that are not specifically "space-based", as well as in those companies that have the objective to innovate througy the use of new tecnologies and space services. The Open Program provides the partecipants key competences to identify and develop commercial opportunities in the area of the New Space Economy"

Anna Masutti
Partner RPLT Legal & Tax, Italy
Academic Director

More information is available HERE.

European Air Law Association (EALA) 36th Annual Conference

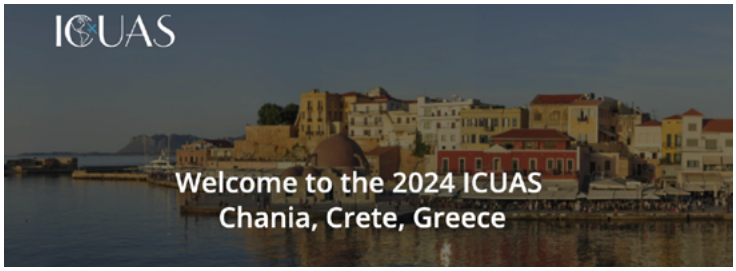
Barcelona (Spain),
7-8 November 2024

Prof. Pablo Mendes de Leon, President of the European Air Law Association (EALA), announced during his closing remarks at the very successful 35th EALA Conference in Stockholm that the venue of the next EALA annual conference will be Barcelona (Spain). More details will follow in 2024.

Sign up HERE to remain updated on the next news about the event.

ICUAS Association, International Conference on Unmanned Aircraft Systems 2024 (ICUAS 2024)

Chania, Crete (Greece),
4-7 June 2024



The 2024 International Conference on Unmanned Aircraft Systems, ICUAS '24, it took place on on 4-7 June 2024. It has been organized for the first time in the historical Center of Mediterranean Architecture (KAM), which is hosted in the Great Shipyard (Megalo Arsenali) of Chania.

ICUAS '24 focused on civil and public domain applications and on the societal impact of unmanned aviation, and its effect on everyday quality of life. Topics of special importance were:

- Bioinspired aerial platforms
- Hybrid platforms
- Design for resiliency
- Human factors
- Framework and regulations for integration into the national airspace

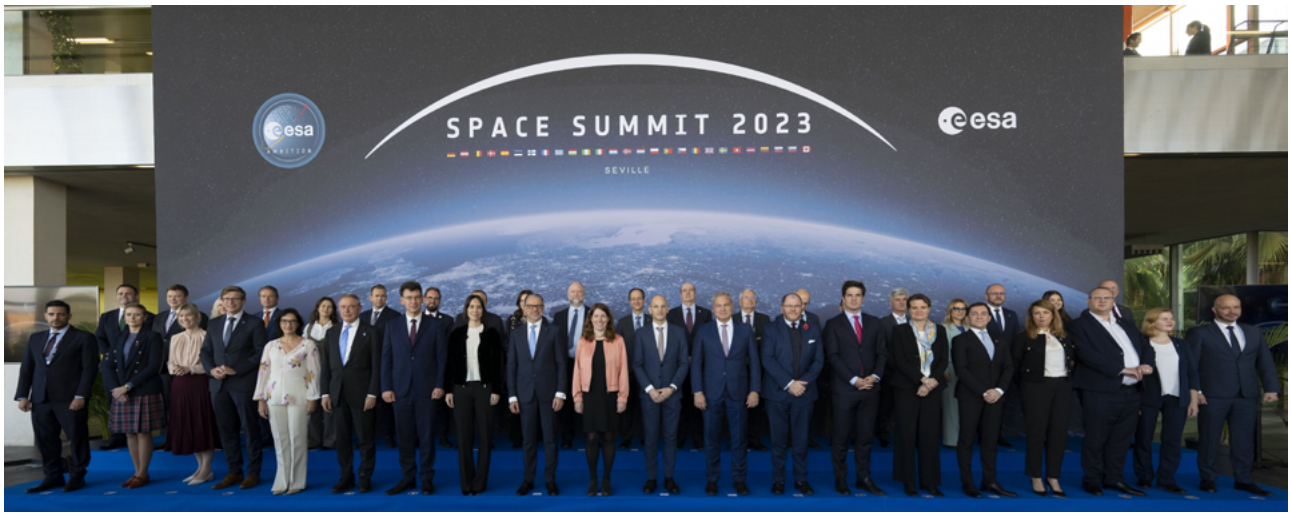
ICUAS '24 brings together, under one forum, national and international organizations, federal agencies, industry, the private sector, authorities, end-users, and practitioners, who work towards defining roadmaps of Unmanned Aircraft Systems/Remotely Piloted Aircraft Systems (UAS/RPAS), they set expectations and technical requirements and standards that are prerequisite to their full utilization and integration into the national airspace. Special emphasis has been given to research opportunities, and to 'what comes next' in terms of the tools and support technologies, and standards, which need to be utilized and implemented to advance the state-of-the-art.

More information on the Conference is available HERE.

SPACE SUMMIT 2023

*by Luisa Santoro**

SEVILLE
6-7 november 2024



On 6 and 7 November 2023, European Ministers met in Seville (Spain) for the Space Summit - a Ministerial-level ESA Council coupled with an informal EU Competitiveness Council and a Joint ESA-EU meeting - organised under the Spanish Presidency of the EU Council and the German Presidency of the European Space Agency Council, in order to define the European continent's future in outer space, including potential exploration missions and issues related to space access.

As ESA Director General said[1] after the conclusion of the event,"*The importance of these decisions on launchers and exploration cannot be underestimated. Having autonomous access to space enhances Europe's strategic independence in an evolving and sometimes hostile geopolitical context. Exploration serves as a technological catalyst, offers scientific opportunities, and drives social and economic vitality.*".

In turn, in his speech, the Minister of Enterprises and Made in Italy, Adolfo Urso - accompanied by Ambassador Mario Cospito and the President of the Italian Space Agency, Teodoro Valente -, also emphasized the need to give priority to space transportion and human and robotic exploration. For Italy - Minister Urso added - cooperation in those domains is essential.

More information is available HERE.

* Italian Space Agency - International Affairs Directorate, Head of Bi- and Multi-lateral Relations with EU Countries Office.

1 https://www.linkedin.com/pulse/watershed-decisions-seville-josef-aschbacher-vqyte%3FtrackingId=3bK%252F%252BvnbUhvKQZ4WE9Ysig%253D%253D/?trackingId=3bK%2F%2BvnbUhvKQZ4WE9Ysig%3D%3D

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