IATA ANNUAL GENERAL MEETING

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The Power of Flight

Operations and Safety Update

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OPERATIONS

- Preparing for the summer
- Supply chain challenges

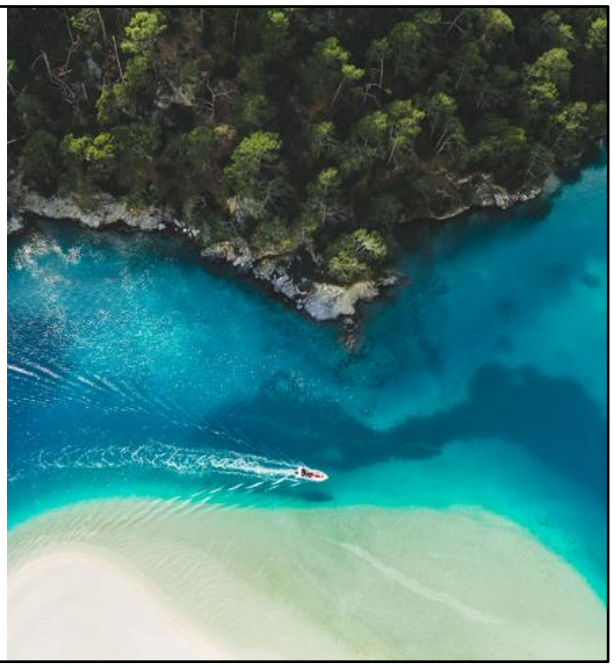
SAFETY

- Safety performance update
- Accident Reports
- IOSA Risk Based approach
- 5G

- Booking data points to strong peak season travel
- Jan – April forward bookings data for May – September is tracking at 29% above 2022 levels.

2023 v 2022 Booking Data:

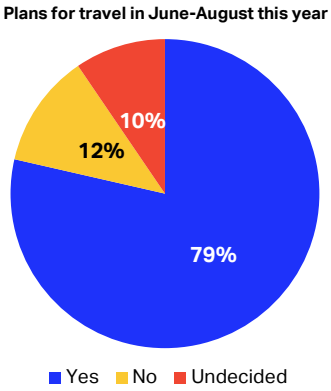
- Asia Pacific (+128%)
- Middle East (+17%)
- Europe (+22%)
- Africa (+21%)
- Latin America (+20%)
- North America (+13%)



- Forward bookings data indicates that greatest growth is expected in:
  - Asia Pacific region (128%)
  - Middle East (17%)
  - Europe (22%)
  - Africa (21%)
  - Latin America (20%)
  - North America (13%)

A strong majority of passengers said they are planning to travel in June-August this year

79% of travelers are planning a trip this summer



In the same survey:

85% said summer travel disruptions should not be a surprise

80% said travel expectations are high this summer

Travelers in India, Singapore, and the USA lead the group in making plans for the upcoming season

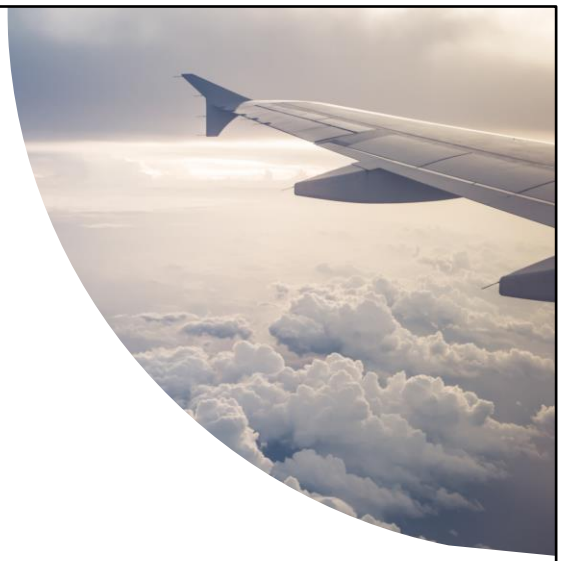
Q37.b.3. Are you planning to travel in the June-August period this year?

- This was reflected in a recent IATA passenger *survey.
- Expectations are high for this year's peak Northern summer travel season.
- For many this will be their first post-pandemic travel experience.
- While some disruptions can be expected, there is a clear expectation that the ramping-up issues faced at some key hub airports in 2022 will have been resolved.
- To meet strong demand, airlines are planning schedules based on the capacity that airports, border control, ground handlers, and air navigation service providers have declared. Over the next months, all industry players now need to deliver.

*The IATA passenger insights survey was conducted April 26-May 3 2023 with a sample of 4,700 recent travelers. It covers 11 markets (Australia, Canada, Chile, France, Germany, India, Japan, Singapore, UAE, US, and UK). Sample size in each market was 500 apart from Chile, Japan, Singapore and UAE where it was 300. This Is Motif Ltd prepared the questionnaire and analysis based on data collection and tabulation by Dynata. https://www.thisismotif.com/

Industry Ready, Critical Areas Addressed

- Capacity
- Staffing
- Scheduling



- To minimize operational disruptions and their impact on passengers', collaboration and accurate information sharing is essential. Critical areas for assessment include:
  - **Declared Capacities:** The biggest challenge in 2022 was miss-alignment on levels of capacity available. Any deviations from declared capacities must be managed well in advance and should already be known.
  - **Staffing:** Ensuring sufficient staffing was also an issue in 2022. With a year to prepare, the expectation is for adequate staffing levels to be met with more efficient induction measures. Specifically, optimizing the time needed for background checks and training should enable more effective peak-season preparations.
  - **Scheduling:** Even with the best of planning, weather, labour issues and equipment failures can disrupt schedules. Assessing the capacity needed to recover schedules when such events occur has have been a key part of peak-season planning.

A huge amount of work has gone into the planning for a successful peak summer travel season. We are confident, based on the commitments shared by our system partners, that there is sufficient capacity in the system to meet traveler expectations.
We do need to keep an eye on Europe where strike action caused significant disruptions earlier this year.
It is the responsibility of governments to have effective contingency plans in place so that the actions of those providing essential services like air traffic control or airport security maintain minimum service levels and do not disrupt travel.

Supply Chain Challenges

- Delivery agreements
- Challenges getting spare parts

- During the last few months airlines have been facing unprecedented supply chain issues related to aircraft parts.
- This is a global problem.
- These issues are impacting the delivery schedules of new aircraft and lead to extended delays and uncertainty of maintenance repair and overhaul (MRO) services for in service aircraft.
- The result is a lack of aircraft capacity and uncertainty in airline schedules for the upcoming summer season and beyond.

A Perfect Storm

Unprecedented supply chain issues related to aircraft parts due to:

- **COVID**
  Shortage of electronics (incl. microchips)
  Delays in shipments and logistics (esp. out of Asia)
  Departure of large numbers of skilled personnel
- **War in Ukraine**
  Lack of raw materials (e.g., Titanium)
- **Regulatory:**
  Compliance in aircraft production lines
- **Business models**
  Single sourcing (company, site) and exclusive agreements, decisions on parts allocation, visibility, alternates

- As this slide illustrates, the reasons are varied and linked to several factors including COVID, which greatly disrupted global supply chains for key components, not only for aviation but for automobiles, household appliances and other consumer goods.
- The War in Ukraine and resulting economic sanctions have also contributed, with shortages of key raw materials such as titanium, used in aircraft structural components.
- New government regulations have also played a role in terms of impacting aircraft assembly.
- Additionally, OEMs increasing reliance on single-source parts as well as exclusive agreements has created an “eggs in one basket” affect.
- A bottleneck with one supplier—or a single manufacturing facility--can ripple through the entire supply chain.

Latest Developments

- Uncertainty of delivery times => build up of costly/inefficient inventories
- Airlines looking into non-OEM sourcing for parts
- Labor issues continue as it takes time for new hires to get properly trained
- Price surcharges beyond contractual terms
- Reliability issues with certain components
- Suppliers torn between providing parts to aircraft OEMs for new aircraft or providing them to airlines to fix grounded aircraft.

- Other factors include skilled labor shortages in both the manufacturing and MRO sectors.
- Price surcharges beyond contractual terms.
- Reliability issues with some components that have led in some cases to many aircraft being grounded.
- Parts makers being pulled in two directions: Do they supply a part to an aircraft manufacturer to build a new aircraft or provide it to an airline that needs a replacement part?
- All of this has incentivized airlines to become more active in pursuing alternative sources for parts, such as increasing the use of non-OEM parts that are approved by the regulator and repairing some parts that might otherwise be replaced, also with regulator approval.
- There are no simple solutions to this situation, but it is raising industry costs and impacting schedule keeping.

Safety

Accidents Overview-Safe & Getting Safer

	2022	5-Year Average
Accident Count	39	43
All Accident Rate	1.21	1.26
Jet Hull Losses	5	5
Turboprop Hull Losses	5	4
Fatal Accidents	5	7
Fatalities on-Board	158	231
Fatality Risk	0.11	0.13
IATA Members Accident Rate	0.49	0.76
IOSA Carriers Accident Rate	0.70	0.88
Sectors (mil.)	32.2	34.4

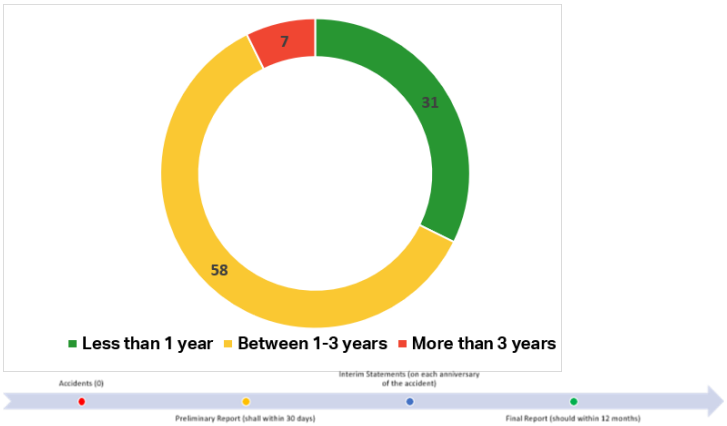
- According to the IATA Safety Report, in 2022, there were five fatal accidents involving loss of life to passengers and crew. This was an improvement on the five-year average (2018-2022).
- There were 39 total accidents last year compared to the five-year average of 43.
- The all-accident rate was 1.21 per million sectors, a reduction compared to the rate of 1.26 accidents for the five years 2018-2022.
- The industry 2022 fatality risk of 0.11 means that on average, a person would need to take a flight every day for 25,214 years to experience a 100% fatal accident. This is an improvement over the five-year fatality rate (average of 22,116 years).

Status of Accident Investigation Reports

- The accident investigation process is one of our most important learning tools when building global safety standards.

- The requirements of the Convention of International Civil Aviation (Chicago Convention) Annex 13 are clear. States in charge of an accident investigation must:
  - Submit a preliminary report to the International Civil Aviation Organization (ICAO) within 30 days of the accident
  - Publish the final report as soon as possible and within 12 months of the accident.
  - Publish interim statements annually should a final report not be possible within 12 months.

Time to Final Report Since Accident Date



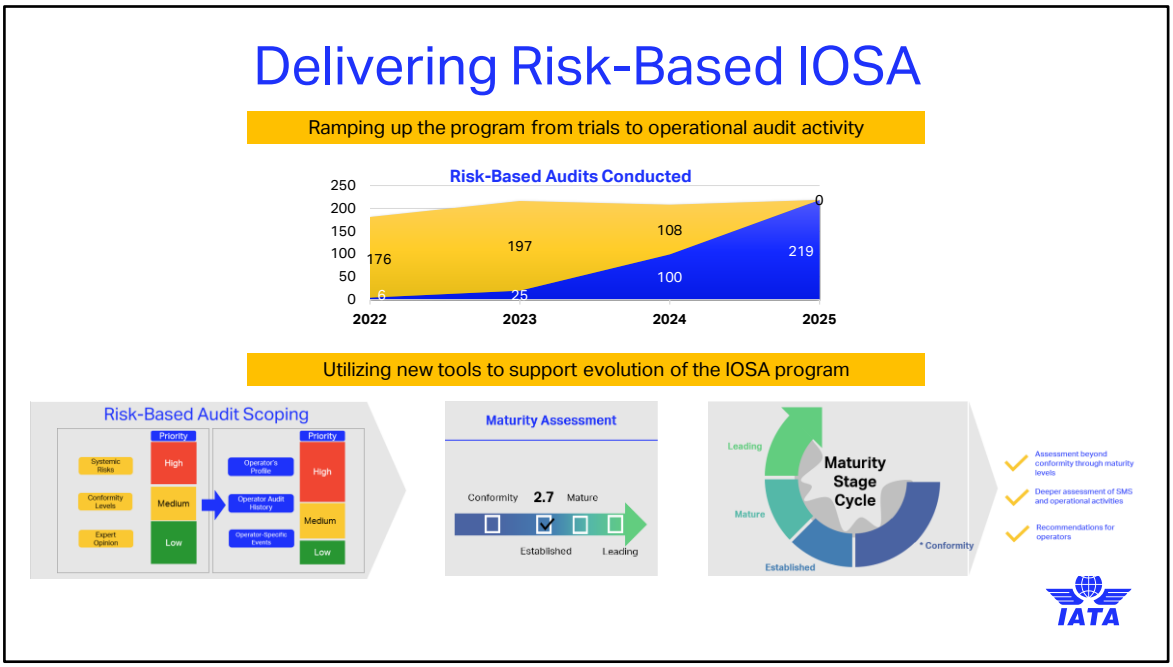
- Final accident reports have been published for just 96 of the 214 accidents that occurred between 2018-2022.
- Five of these reports do not meet ICAO's criteria for such reports while four others are not publicly accessible for various reasons.
- Just 31 reports were published in less than one year of the accident with the majority (58) taking **up to** 3 years.

- Launched in 2003 with Qatar Airways as the first participant, the overall objective of IOSA is to reduce the number of redundant audits in the industry and to improve the global accident rates in the airline industry.

- IOSA has improved safety, greatly and reduced redundant audits. It is used by many regulators to complement their safety programs.

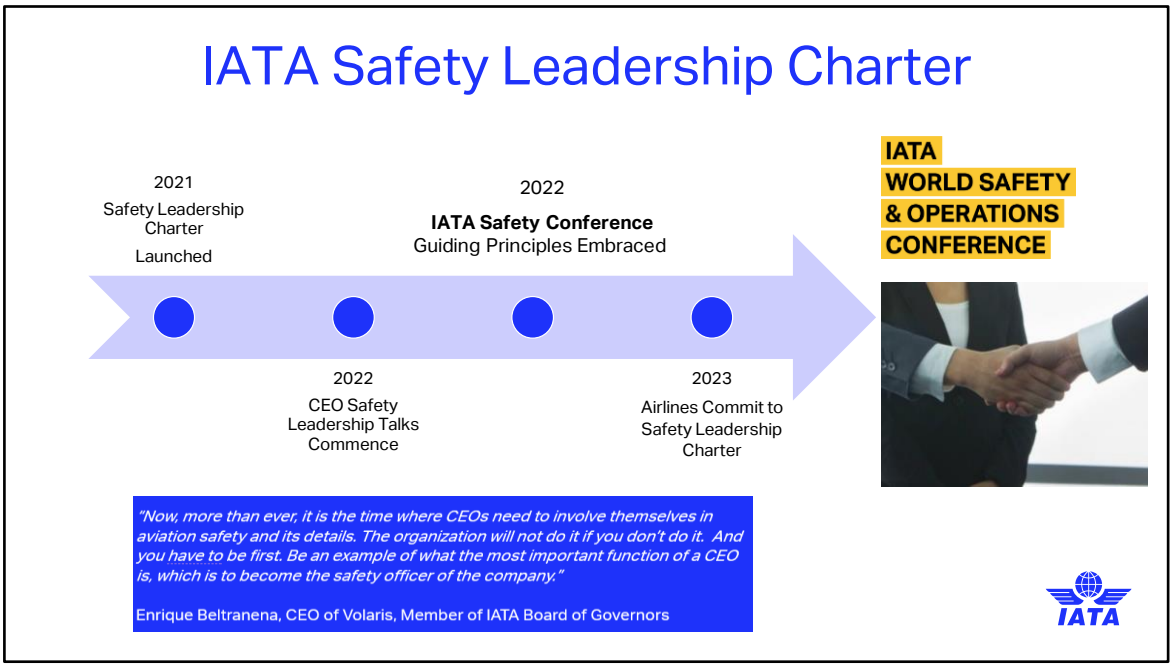
- Last year, the IOSA airlines all-accident rate was four times better than the rate for non-IOSA airlines (0.70 vs. 2.82).

- Since 2005, the all-accident rate for airlines on the IOSA registry is 1.40 per million sectors compared with 3.49 per million sectors for non-IOSA airlines. Similarly, the fatality rate is 0.11 compared with 0.62.

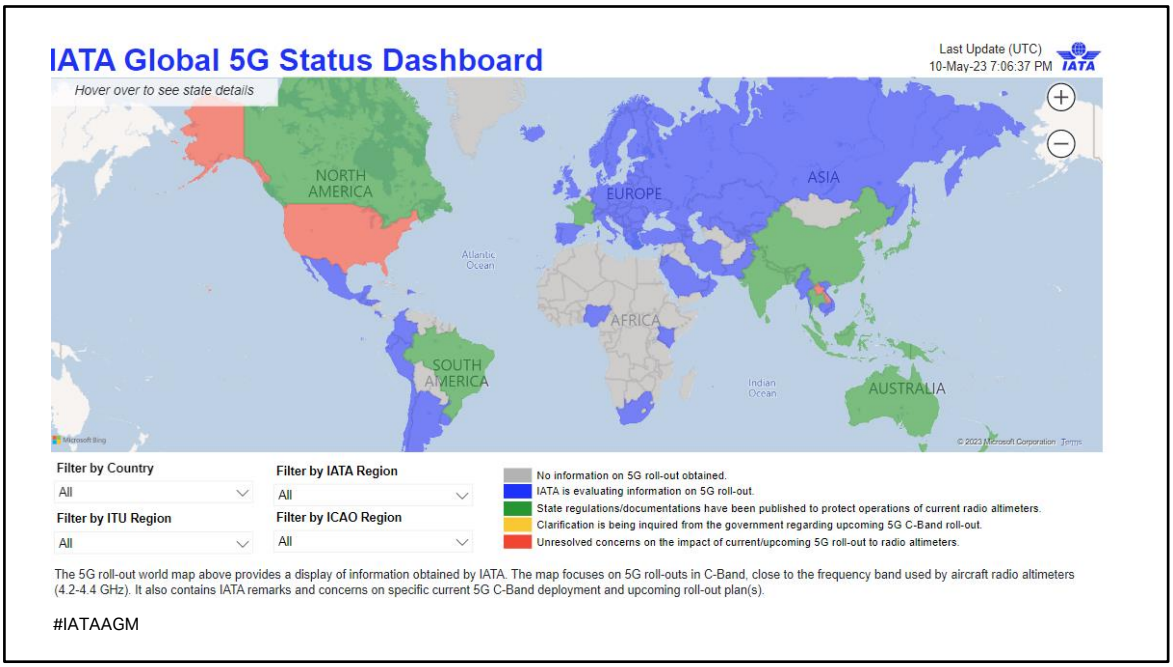


- In its 20th anniversary year, IOSA is rolling out its risk-based model.

- Instead of auditing all airlines in a one-size-fits all approach, Risk-based IOSA takes into account, among others, systemic risks, the airline's conformity levels with the ISARPs and experts' opinions, in identifying the most pertinent areas to be audited.
- This focused approach makes space for a Maturity Assessment of the operator's SMS and safety-critical programs such as the flight crew training program. The maturity assessment determines, above and beyond compliance, how an airline manages safety.
- The maturity assessment is conducted against a set of defined criteria and will provide the airline with high-value insights in regards to their SMS. Airlines will be able to continuously evolve and improve their safety practices throughout the years.
- The airline will still need to demonstrate conformity with the IOSA standards in order to renew its registration.
- An airline's maturity would be factored into decisions on variable registration periods that will be considered in the future.
- The new concept was trialed successfully and is being rolled out in accordance with an established transition plan. The plan foresees some 25 risk-based audits in 2023 and some 100 in 2024, while the accredited Audit Organizations will continue conducting the remaining audits in the conventional way, until they will be phased out in an orderly fashion, by 2025. IATA is scaling up its resources and building up the organizational capability to deliver risk-based audits for the industry.
- With Risk-based IOSA, IATA is reforming its flagship audit program and leading in the operational safety assurance space. Regulators and airlines alike have expressed their appreciation for this change.



- Safety Leadership is the leading pillar of the IATA Safety Strategy launched in 2021.
- Accident investigations have identified that Safety Culture enhances safety performance and reduces the likelihood of accidents.
- Safety Leadership in an organization is thus a prerequisite for a positive Safety Culture
- The Safety Leadership Charter encourages industry executives to adopt, implement and demonstrate in practice the eight guiding principles, developed by industry and supported, at the 2022 IATA Safety Conference.
- Thanks to all CEOs who have supported the IATA Safety Leadership initiative through personalized Safety Talks available on iata.org
- The IATA World Safety & Operations Conference, this September in Hanoi, will officially launch the Safety Leadership Charter with a number of leading airlines announcing their support.



- IATA continues to track and engage with states where 5G telecommunications services have been rolled out. While, with one very notable exception—the United States, there is little to no impact today in most countries.
- However, there is concern that opposition from telcos to power restrictions (e.g., Canada and Europe) will create interference issues in the future.
- This is mainly driven by increasing pressure from the telecom community in some states to allow 5G without mitigations to protect aviation.
- ICAO is planning to release a circular on mitigation measures against 5G interference which should serve as a reference and guidance for States.
- IATA and other aviation stakeholders continue to work through ICAO and the ITU to safeguard aviation safety through the protection of aviation spectrum
- IATA's online dashboard is a resource that can be used for information on 5G roll-out and mitigation measures.

5G Update in the USA

- Upcoming aircraft Radio Altimeter retrofit target dates:

  1 July 2023: non-retrofitted aircraft operations restricted

  1 February 2024: non-retrofitted aircraft banned from US airspace

- Many airlines will be unable to make 1 July deadline due to supply chain challenges

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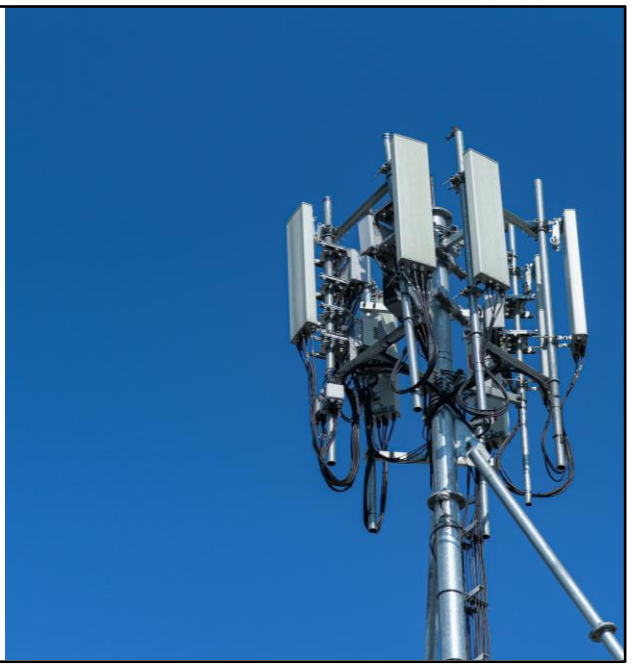

- The US is the largest air market in the world. It is also one where safety and telecom regulators did not work together to support a safe seamless rollout of 5G services in 2021.
- The result has been enormous added expense to the industry to modify or replace radio altimeters (radalts) to ensure critical aircraft landing and safety systems are not impacted by interference from 5G towers located near airports and approach paths.
- Here's the current situation:
- FAA has mandated airlines to retrofit radalts to be able to continue to operate into major US airports in low visibility situations where 5G antennas are present & operating.
- As of July 1, 2023, non-retrofitted aircraft will not be able to utilize Cat 2 and Cat 3 (low visibility approach and landing) procedures at ALL 188 major US airports
- As of February 2024, no non-retrofitted aircraft will be able to operate in US airspace
- Significant numbers of Boeing and Airbus aircraft will not make this unrealistic July deadline, which will likely result in increased operational disruption, possible flight cancellations and diversions.
- It is also anticipated that aircraft will have to retrofit their radalts a second time once the new radalt standard is issued in 2024, in order to continue operating after 1 January 2028, when the telcos' voluntary power mitigations around airports end.

We need to work better on allocation and **protection** of spectrum given the impacts of interference on **safety of flight**

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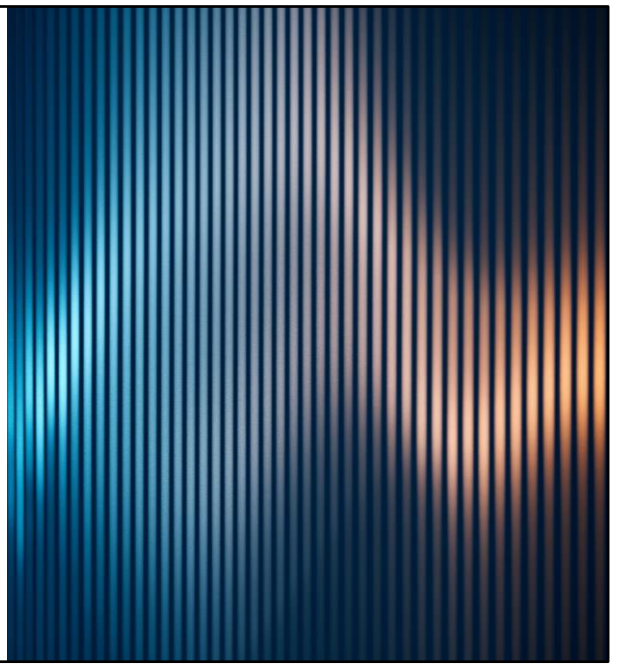

- We are working with ICAO and the ITU on spectrum issues beyond 5G to ensure that future expansion in telecom infrastructure is done effectively and without having any safety (interference risks). We expect continued and growing risk of Radio Frequency Interference (RFI) with existing avionics technology, e.g.

- 6G is on the horizon with potential impacts to aircraft weather radar.

- We are engaging with the telecom community, and we do believe that there are areas to work together but we need governments and spectrum regulators to work together, not only in the implementation/roll-out phase, but in the planning stage and before frequencies are allocated and auctioned.