



International Civil Aviation Organization

## WORKING PAPER

A42-WP/541

EC/42

11/9/25

### ASSEMBLY — 42ND SESSION

#### ECONOMIC COMMISSION

#### Agenda Item 26: Economic Development of Air Transport

#### COST RECOVERY FOR THE PROVISION OF SPACE WEATHER INFORMATION SERVICES

(Presented by the Council of ICAO)

#### EXECUTIVE SUMMARY

This paper reports to the Assembly on the work that has been undertaken by the Council to address Assembly Resolution A41-27, *Consolidated Statement of Continuing ICAO Policies in the Air Transport Field* specifically, operative clause 11 of Appendix C, Airports and Air Navigation Services Economics to “address the issues of the appropriateness of a global cost recovery system for the provision of space weather information services for international civil aviation, including the development of a cost recovery mechanism consistent with ICAO’s charging principles”.

Pursuant to the Resolution, the activities summarized herein reflect the efforts undertaken under this mandate. The outcomes and considerations arising from the work on the cost recovery framework for space weather information services provide the basis for, and support, the proposed amendment to Resolution A41-27.

**Action:** The Assembly is invited to:

- acknowledge the work conducted since the 41st Session of the Assembly as set out in the Appendix;
- consider the responses received to the State letter on this subject, and the related deliberations of the Council as outlined in Section 4; and
- consider the recommendation in this paper when reviewing the proposed amendment to Resolution A41-27 as set out in A42-WP/42.

<i>Strategic Goals:</i>	This working paper relates to Strategic Goal – <i>The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All.</i>
<i>Financial implications:</i>	The activities referred to in the attached Assembly working paper will be undertaken subject to the resources available in the 2026 – 2028 Regular Budget and/or from extra budgetary contributions.
<i>References:</i>	Doc 10184, <i>Assembly Resolutions in Force</i> (as of 7 October 2022) A42-WP/42 <i>Consolidated Statement of Continuing ICAO Policies in the Air Transport Field</i> State letter 25/38

## 1. INTRODUCTION

1.1 Assembly Resolution A41-27: *Consolidated statement of continuing ICAO policies in the air transport field*, Appendix C, operative clause 11 adopted at the 41st Session, requested the Council to “address the appropriateness of a global cost recovery system for the provision of space weather information services, including the development of a cost recovery mechanism consistent with ICAO’s charging principles.”

1.2 The Council undertook a range of activities, including the exploration and development of two options for a global cost recovery mechanism in consultation with States, industry, service providers and expert panels, as well as the analysis of responses to State Letter 25/38.

## 2. BACKGROUND

2.1 In March 2018, during its 213th Session, the ICAO Council approved Amendment 78 to Annex 3, *Meteorological Service for International Air Navigation*, (C-DEC 213/5 refers) introducing provision of space weather advisory information services (Section 3.8 of the Annex refers), as well as a requirement for States to supply space weather advisory information to operators and flight crew members (paragraphs 9.1.1 and 9.1.3 k of the Annex refer), with an applicability date of 8 November 2018. The Annex is further supported by ICAO Doc 10100, *Manual on Space Weather Information in Support of International Air Navigation*.

2.2 In November 2018, during its 215th Session, the ICAO Council approved the establishment of a global space weather information service, as proposed by the Air Navigation Commission (ANC). The Council noted that all service providers who were designated as global or regional space weather centres (SWXCs) had successfully met the technical qualifications as assessed by the technical audits conducted by the World Meteorological Organization (WMO) and approved the recommendation of the ANC to designate three service providers as ICAO global SWXCs (C-DEC 215/7 refers), namely: the ACFJ consortium (comprising Australia, Canada, France and Japan); the Partnership of Excellence for Civil Aviation Space Weather User Services (PECASUS) consortium (comprising Austria, Belgium, Cyprus, Finland, Germany, Italy, Netherlands, Poland and the United Kingdom); and the United States. In addition, two regional SWXCs were designated namely the China/Russian Federation consortium (CRC) and South Africa.

2.3 At the 219th Session of the Council, in April 2020, the Council agreed, at the request of the CRC, to its designation as the fourth ICAO global SWXC (C-DEC 219/7 refers).

## 3. COST RECOVERY

3.1 In November 2018, when the ICAO Council designated the three global SWXCs, it was with the understanding that the space weather information services would be provided at no cost to the aviation user community for the first three years of operation, to allow for the review of the SWXCs’ implementation and the cost of providing the service. The three-year period of no cost of the SWXC’s provision ended on 6 November 2022.

3.2 At its 217th Session in May 2019, the Council noted that, under Article 15 of the *Convention on International Civil Aviation* (Chicago, 1944 – the “Chicago Convention”), the charges imposed by a Contracting State for the use of airports and air navigation facilities are subject to review by the Council and that services necessary to meet meteorological requirements under Annex 3 can be subjected to a cost recovery mechanism.

3.3 At its 225th Session in February 2022, the Council confirmed that cost recovery should be applied globally by the ICAO designated SWXCs. The technical panels, namely, the Airport Economics Panel (AEP), the Air Navigation Services Economics Panel (ANSEP) and the Meteorology Panel (METP) were tasked to conduct a detailed assessment of the cost associated to the provision of space weather information services by each provider, and identify the proportion allocatable to civil aviation users, with accompanying justifications, and report this information to the Council. The panels were also requested to accelerate its work to develop fair, transparent, and equitable options for an appropriate cost recovery mechanism at the global level, in line with ICAO's policies and guidance.

3.4 At the 41st Session in September 2022, the ICAO Assembly requested Council to "address the appropriateness of a global cost recovery system for the provision of space weather information services, including the development of a cost recovery mechanism consistent with ICAO's charging principles." (Assembly Resolution A41-27, Appendix C, paragraph 11 refers).

3.5 At the 227th Council Session in November 2022, service providers provided a detailed assessment of the cost associated with the provision of the service by each provider, with justification for the allocation to civil aviation. These costs were reviewed and analysed by an independent oversight task force (IOTF) on the reasonability of the cost to aviation, refer to the report of the group ([IOTF Report](#)).

3.6 Subsequently, several cost recovery mechanisms were considered and two were developed and analysed in detail. Concept Notes were developed for the two options: **Option – Operator Charge**, proposing a Global User Charge to Air Operators; and **Option – State Charge**, outlining a Global Charge Allocation to States.

3.7 A summary of related working papers and decisions by session are provided in the Appendix.

#### 4. STATE LETTER CONSULTATION

4.1 During its 233rd Session, the Council agreed to initiate a State Letter consultation with Member States regarding the two options. Technical details of each option and service provider cost information, in addition to the cost implications of each option were outlined in the attachments to the State letter. A summary of the responses to the State consultation reported to Council is as follows:

Options	Responses*
Operator Charge	16
State Charge	18
Request for extension/clarification	3
Other**	8
Total	45

\* Additional submissions have since been received

\*\*Includes free service request, questions and other suggested options

4.2 The Operator Charge option was seen to be fair in directly involving service users, however, concerns were raised regarding legal and administrative challenges, as well as incompatibility with national regulations. The State Charge option was viewed to be more feasible and equitable, allowing States to integrate costs into existing frameworks. Some concerns were expressed that a global charge in general could potentially place more burden on small and developing States and those with low air traffic.

4.3 The Council considered and deliberated on these responses at its 235th Session, noting the absence of a clear majority between the two options while some States requested extensions or clarifications and others proposed alternative options. The results also highlighted the complexities of establishing a global cost recovery mechanism, including differing views on ICAO's role in such mechanisms.

## 5. **CONCLUSION**

5.1 In the absence of consensus among Member States on the way forward for a global cost recovery mechanism, the Council recommends that no further work be undertaken for the development of a global cost recovery mechanism for space weather services. At the same time, the Council agreed to reconvene on the matter during its 236th Session, with the support of the Air Navigation Commission, to identify the next steps.

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## **APPENDIX**

### **SUMMARY OF WORKING PAPERS AND DECISIONS BY SESSION (2018 – 2025)**

The official record of the Council's deliberations is contained in the Minutes of the Council meetings for each session, to which reference may be made for further details.

#### **213th Session (March 2018)**

**C-WP/14716** presented a proposal of the Air Navigation Commission for Amendment 78 to Annex 3 — *Meteorological Service for International Air Navigation*. The amendment proposal included: a) introduction of space weather advisory information services, improvement of the provision of SIGMET information by meteorological watch offices (MWOS), information on the release of radioactive material into the atmosphere, SIGMET and AIRMET information, modifications of IWXXM representations of information, aeronautical meteorological personnel qualification and competency, education and training; and b) a consequential amendment concerning change of references related to the provision of aeronautical information service. The effective date of July 2018 and a proposed applicability date of 8 November 2018 was deemed suitable for Amendment 78 to Annex 3, with the except for certain provisions.

#### **C-DEC 213/5 - Adoption of Amendment 78 to Annex 3**

9. The Council considered this item on the basis of ANC report C-WP/14716, which presented a proposal of the Air Navigation Commission for Amendment 78 to Annex 3 – Meteorological Service for International Air Navigation. The amendment proposal concerned the introduction of space weather advisory information services, improvement of the provision of SIGMET information by meteorological watch offices, information on the release of radioactive material into the atmosphere, SIGMET and AIRMET information, modifications of IWXXM representations of information, aeronautical meteorological personnel qualification and competency, education and training; and a consequential amendment concerning change of references related to the provision of aeronautical information service.

10. It was noted that having examined the technical circumstances associated with the implementation of the amendment, the Air Navigation Commission considered that an effective date of July 2018 and a proposed applicability date of 8 November 2018 would be suitable for Amendment 78 to Annex 3, except for the provisions concerning modifications of IWXXM representations of information and information on the release of radioactive material into the atmosphere, in which case the proposed applicability date would be 7 November 2019, and the provision concerning IWXXM as a Standard, in which the proposed applicability date would be 5 November 2020.

11. Following consideration, the Council by 34 votes in favour, none against and no abstentions (two Representatives being absent):

- a) adopted, as Amendment 78 to Annex 3, the amendments to definitions and to Standards and Recommended Practices as contained in Appendix C to C-WP/14716;
- b) approved, as part of the said amendment, the amendment to notes and attachment as contained in Appendix C to C-WP/14716;
- c) approved the Resolution of Adoption in Appendix D to C-WP/14716;

- d) approved, as part of the said amendment, the amendment to the Foreword of Annex 3 as contained in Appendix E to C-WP/14716; and
- e) noted the incorporation of Amendment 77-B with proposed Amendment 78 in a new, consolidated edition of Annex 3 as described in paragraph 5.1 of C-WP/14716.

12. In relation to the issue of coverage of meteorological services within each country, it was noted that while the World Meteorological Organization (WMO) provides an oversight of the weather service providers in States, it is the Civil Aviation Authority (CAA) that should provide the necessary oversight for aeronautical meteorological services.

13. The Council also noted that in order to provide States with a comprehensive edition of Annex 3, Amendment 77-B (adopted by the Council on 22 February 2016 and applicable on 5 November 2020) would be consolidated with the proposed Amendment 78 in a new edition of the Annex. In so doing, the provisions of Amendment 77-B would be adjusted editorially to feature the 2019 and 2020 applicability dates at the beginning of each affected provision.

### **215th Session (November 2018)**

**C-WP/14800** proposed the designation of space weather service providers in line with Annex 3 to the Chicago Convention. Three global providers (ACFJ, PECASUS, USA) and two regional providers (China/Russia, South Africa) were identified following a WMO audit. The first three years of service would be provided at no cost, with cost recovery mechanisms to follow. A system review was planned for 2022, and a reassessment of the number of providers is scheduled for 2027.

### **C-DEC 215/7 - Designation of provider States of space weather information (Subject No. 14.3.11):**

1. The Council resumed (215/4) and completed consideration of C-WP/14800, whereby the Air Navigation Commission (ANC) presented a proposal for the establishment of a global space weather information service developed with the assistance of the Meteorology Panel (METP), which had provided an assessment of the audits of potential service providers conducted by the World Meteorological Organization (WMO). The ANC invited the Council to: a) appoint three global space weather information service providers, namely, the ACFJ consortium (comprising Australia, Canada, France and Japan), the PECASUS consortium (comprising Austria, Belgium, Cyprus, Finland, Germany, Italy, Netherlands, Poland and the United Kingdom) and the United States; b) agree that two regional centres, comprising the China/Russian Federation consortium and South Africa, be established no later than November 2022; and c) agree to review the global and regional centres' implementation in 2022 and reassess the optimal number of global and regional space weather information service providers by 2027.

2. Pursuant to the agreement reached previously (215/4), the President of the Council had undertaken informal consultations with the Secretariat, the President of the ANC and some Council Representatives on this subject, and prior to the start of the present meeting, had circulated to Representatives by e-mail proposed action by the Council as a compromise solution. The President proposed that: the Council agree to the action proposed by the ANC in C-WP/14800, on the understanding that space weather information services would be provided at no cost to the aviation user community for the first three years of operation; note the interest expressed at the Council's Fourth Meeting on 5 November 2018 by China and the Russian Federation to serve together as a global centre; task the ANC to: i) advise on the method to include as future providers – at global and regional levels – those candidates which had successfully satisfied the WMO audit process; and ii) facilitate the development of coordination methodologies between designated global and regional centres as necessary to ensure the provision of consistent space weather information; request the ANC to report thereon during the Council's

217th Session in May/June 2019; and agree to review in 2022 not only the global and regional centres' implementation but also the cost of provision of service after the first three years.

3. Comments and suggestions made, and concerns expressed were noted, as were the clarifications provided. The President of the Council highlighted that there were three options before the Council based on the discussions: 1) accept the ANC's proposed action (C-WP/14800); 2) accept the President's proposed action as outlined above; or 3) take a political decision and appoint four global space weather information service providers, namely, ACFJ consortium, the PECASUS consortium, the United States and the China/Russian Federation consortium.

4. On the basis of an indicative show of hands on each of the said three options, the Council decided to take the action proposed by its President, as subsequently expanded to include a suggested additional ANC task, and:

- a) agreed that, as recommended by the ANC, the ACFJ consortium, the PECASUS consortium, and the United States serve as global space weather information service providers, on the understanding that the space weather information services would be provided at no cost to the aviation user community for the first three years of operation;
- b) agreed that, as recommended by the ANC, two regional centres, comprising the China/Russian Federation consortium and South Africa, be established no later than November 2022;
- c) noted the interest expressed by China and the Russian Federation to serve together as a global centre;
- d) tasked the ANC to:
  - i) advise on the method to include as future providers – at global and regional levels – those candidates which had successfully satisfied the WMO audit process;
  - ii) facilitate the development of coordination methodologies between designated global and regional centres as necessary to ensure the provision of consistent space weather information; and
  - iii) consider, with the support of the Secretariat, whether there was a continuing need for ICAO to designate global and regional centres.
- e) requested the ANC to report on the progress with respect to sub-paragraphs a) to d) above to the Council during the 217th Session in May/June 2019; and
- f) further agreed to review the global and regional centres' implementation and the cost of provision of service after the first three years in 2022, and reassess the optimal number of global and regional space weather information service providers by 2027.

5. With regard to paragraph 4 d) ii) above, the Council requested that the said two regional centres be invited to participate in the envisaged discussions on coordination methodologies. With respect to paragraph 4 d) iii), it was understood that if the Council were to decide in future, on the basis of a



recommendation by the ANC, to no longer designate global and regional centres for the provision of space weather information, then Annex 3 would be amended accordingly.

6. The following lessons learned were retained from the process followed to designate providers of space weather information: the need to pay more attention to the procedural matter of developing substantive criteria with which to differentiate between the quality of the space weather information service offered by prospective providers; the need for the assessment/selection process of potential service providers to be fair and transparent and to be adhered to by all concerned, with a view to avoiding any potential issue of conflict of interest; the need for all technical issues to be resolved to a very large extent before the matter was brought before the Council; and the need for the Council to have a clear understanding of the role it would assume as a consequence of adopting any proposed SARPs and to raise any issues and concerns in that regard before their adoption.

7. It was highlighted: that the Annex 3 SARPs which set requirements for the provision of information on space weather had become applicable on 8 November 2018; and that from that date the PECASUS consortium had started to provide 24/7 space weather information service based on Annex 3, with two test space weather advisories having thus far been issued. It was noted that the dissemination of the PECASUS space weather advisories would be moved to the Aeronautical Fixed Telecommunication Network (AFTN) once the latter was ready to handle such advisories.

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## 216th Session (February 2019)

**C-WP/14837** outlined the work of the Thirteenth Air Navigation Conference (AN-Conf-13).

### **C-DEC 216/5 - Review of the Report of the Thirteenth Air Navigation Conference** (Subject No. 14.4.1):

7. Following consideration, the Council:

- a) approved the actions proposed on the recommendations as contained in the Appendix to C-WP/14837;
  - b) noted the actions taken by the Air Navigation Commission under delegated authority on the remaining recommendations and the Secretariat follow-up actions as contained in the Appendix to C-WP/14837; and
  - c) agreed that in the context of the ongoing deliberations concerning the next triennium budget, to give further consideration to the resource implications of implementing all the recommendations that require action, and in doing so, to take into account advice from the ANC on the prioritization of the anticipated work related to the recommendations.
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**217th Session (May 2019)**

**C-WP/14912** provides an update on the implementation of space weather services, including coordination between designated centres, operational timelines, and the role of ICAO in ensuring service consistency and oversight.

**C-DEC 217/2 - Progress report on actions taken regarding the designation of provider States of space weather information** (Subject No. 14.3.11):

14. The Council considered C-WP/14912, in which the President of the ANC, further to its request (C-DEC 215/7), reported on the Commission's review of progress made with respect to the designation of provider States of space weather information.

15. Comments and suggestions were noted.

16. In taking the action proposed by the ANC in the executive summary of C-WP/14912, the Council:

- a) noted the progress made regarding the designation of provider States of space weather information as described in the paper; and
- b) noted the actions taken by the ANC with respect to the tasks assigned by the Council in sub-paragraphs 4 a)-d) of C-DEC 215/7 as set forth in the paper, and in particular noted:
  - i) that for future applications for providers – at global and regional levels – of space weather information, it is advisable not to impose additional requirements on those candidates which had successfully satisfied the World Meteorological Organization (WMO) audit process in accordance with the criteria included in State letter AN 10/1-IND/17/11 dated 9 June 2017 and Electronic Bulletin (EB) 2017/45 dated 10 August 2017;
  - ii) the action taken by the ANC, assisted by the Secretariat and the Meteorological Panel (METP), for the development of coordination methodologies between designated global and regional centres as necessary to ensure the provision of consistent space weather information; and
  - iii) the ANC's advice supporting the continued designation by ICAO of global and regional centres (or providers), notably that "the continued designation of global and regional centres (or providers) by ICAO will protect aviation by facilitating the provision of consistent space weather information and by ensuring that the charges for the provision of the services are fair, equitable, suitable for application and will encourage the use of the information provided" as indicated in paragraph 2.4 of the paper.

17. In also noting that implementation of the space weather information service was expected to start on 7 November 2019, the Council requested that the ANC present a further progress report on this subject during the 219th Session in February/March 2020.

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**219th Session (February 2020)**

**C-WP/15028** proposes designating the China/Russian Federation Consortium (CRC) as a global space weather information service provider. The proposal is based on their successful completion of the WMO audit process, existing involvement in coordination efforts, and the fact that their designation would not alter the total number of service providers or increase user costs. The Council is invited to approve the CRC as a global provider, with services offered free for the first three years, after which a cost-recovery mechanism would be introduced.

**C-DEC 219/7 - Designation of a global provider of space weather information service:**

6. The Council considered this item on the basis of C-WP/15028, which presented a proposal for the designation of a global space weather information service provider based on requests from China and the Russian Federation.

7. Following consideration, the Council:

- a) recalled the previous discussions as well as decisions it had taken during the 215th Session in agreeing on those States and consortia that would be designated as either global space weather information service providers or regional centres (C-DEC 215/7 refers);
- b) agreed that the China/Russian Federation consortium (CRC) serve as a global space weather information service provider, while noting that the integration of the consortium into the global network of service providers should be undertaken as seamlessly and efficiently as possible; and
- c) requested that during its foreshadowed review in 2022 of the first three years of implementation of the space weather information service, the Air Navigation Commission (ANC) also give consideration to evaluating the existing process and criteria applicable in the designation of global and regional centres, including assessing the optimal number of designated global and regional space weather information service providers, on the understanding that the latter had initially been scheduled to occur in 2027.

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**221st Session (November 2020)**

**C-WP/15096** reports on the successful implementation of ICAO's Space Weather Information Service (SWIS), which began on 7 November 2019. It highlights coordination among provider States, system readiness testing, and ongoing service improvements.

**C-DEC 221/8 - Progress report on the implementation of the space weather information service:**

13. The Council considered this item on the basis of C-WP/15096, which presented a progress report on the implementation by provider States of the space weather information service in accordance with previous decisions of the Council (C-DEC 217/2 refers).

14. Following consideration, the Council:
- a) took note of the work undertaken by the Secretariat and the Meteorology Panel Coordination Group on Initial Coordination and Governance of the Space Weather Information Service and the progress made with respect to the implementation of the space weather information service; and
  - b) further took note that ICAO had on 2 October 2019, issued electronic bulletin EB 2019/35, which was intended to increase user awareness about the space weather information service in support of international air navigation, and that additional information in this regard was also recently uploaded to the ICAO Meteorology Panel website.
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### **223rd Session (June 2021)**

**C-WP/15202** presents the status and considerations for developing a cost-recovery mechanism for space weather information services, which were provided free of charge to aviation users for the initial three-year period (starting November 2019).

#### **Key Points:**

- ICAO guidance on aeronautical meteorological cost recovery (Docs 9082 and 9161) is applicable to space weather services.
- The services are provided by multiple global centres, now including the CRC (China/Russia consortium), alongside PECASUS, ACFJ, and the USA.
- Joint financing is being explored as a viable and equitable cost-recovery model, especially given the multinational scope and cost scale.
- The MET Panel's Cost Recovery Guidance and Governance (MCRGG) working groups are developing templates, methodologies, and agreements for:
  - Cost estimation and allocation.
  - Identification and depreciation of capital assets.
  - Fair cost distribution between aviation and non-aviation users.

### **C-DEC 223/6 - Cost-recovery for the provision of space weather information services after the first three years of operation:**

11. The Council considered this item on the basis of C-WP/15202, which provided an overview of the work undertaken to develop a cost-recovery mechanism for the provision of space weather information services. The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC).

12. Following consideration, the Council:
- a) requested that the relevant panels of the ATC and ANC, as well as the Secretariat, expedite their work to develop possible options for an appropriate methodology and mechanism for the cost recovery of space weather information services, including how the cost will be determined and allocated, as well as appropriate oversight and administrative functions and associated costs for both provider States and users; and

- b) also requested that the relevant panels of the ATC and ANC further assess the need for cost recovery of the provision of space weather information services, considering the possibility of the continuous provision of the space weather information services at no cost, including an assessment of the long-term risks that might be associated with the no cost recovery model.

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### 225th Session (February 2022)

**C-WP/15345** summarizes space weather service providers' views on cost recovery, as requested by C-DEC 223/6. Their perspectives, discussed during the 8th METP WG-MCRGG meeting, address the feasibility and risks of continuing service provision without cost recovery. Key points are outlined in Section 3.

Positions of Service Providers is documented in the paper:

ACFJ, supports a global, coordinated cost recovery mechanism and expressed concern that without funding, providers may withdraw, undermining global service continuity. PECASUS, strongly supports cost recovery starting Nov 2022 and warns of loss in data quality, transparency, and service availability without cost sharing. SANSA intends to recover costs to maintain service post-government funding and warns that a no-cost model may degrade African service coverage and safety. The United States will not implement cost recovery due to domestic policy and is open to participating in a cost recovery framework without charging users. CRC recently started operations; will not charge for 3 years and supports free provision for now but sees long-term risk in unfunded models.

Common theme was a broad support for an ICAO-led cost recovery agreement with support for a shared agreement to ensure system sustainability, transparency, fair distribution of costs and stakeholder influence on service development.

### **C-DEC 225/2 - Cost recovery for space weather information services:**

6. The Council considered this item on the basis of C-WP/15345, which pursuant to paragraph 12 b) of C-DEC 223/6, presented an overview of the perspectives and positions of the space weather service providers concerning cost recovery for the provision of space weather information services after the first three years of operation. The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC).

7. Following consideration, the Council:

- a) confirmed that cost recovery should be applied globally to the provision of space weather information services by the ICAO-designated space weather centres;
- b) requested the relevant technical panels to conduct a detailed assessment of the cost associated to the provision of space weather information services by each provider, and identify the proportion of the cost allocable to civil aviation users with accompanying justification, and report this information to the Council, accordingly; and

- c) further requested that the work by the relevant technical panels should be accelerated to develop fair, transparent and equitable options for an appropriate cost recovery mechanism at the global level, in line with the applicable ICAO policies and guidance, for consideration by the Council, at a future session.

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## 41st Session of ICAO Assembly 27 September – 7 October 2022

### ICAO Assembly Resolution

#### PART III. AIR TRANSPORT

##### Air Transport Continuing Policies

#### **A41-27: Consolidated statement of continuing ICAO policies in the air transport field**

##### APPENDIX C

Airports and air navigation services economics, paragraph 11:

Requests the Council to address the issues of the appropriateness of a global cost recovery system for the provision of space weather information services for international civil aviation, including the development of a cost recovery mechanism consistent with ICAO's charging principles.

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## 227th Session (November 2022)

**C-WP/15447** outlines the development and recommendation of a global cost recovery mechanism for ICAO's space weather information services. Initially provided free of charge to the aviation community for three years starting in November 2019, the service is now transitioning to a paid model to ensure its sustainability. The paper summarizes the outcomes of a June 2022 meeting of the Working Group on Meteorological Cost Recovery Guidance and Governance (WG-MCRGG), which included representatives from ICAO panels, IATA, and CANSO. The group assessed the costs incurred by service providers and proposed fair and transparent recovery options.

The preferred mechanism is a global user charge, selected for its alignment with ICAO's principles of non-discrimination, cost-relatedness, transparency, and user consultation. This option was deemed the most feasible and equitable among the alternatives considered, which included state assessments and charges via air navigation service providers. The paper also recommends the establishment of an independent oversight body to monitor cost allocations and prevent unjustified charges.

Cost allocation is based on the proportion of services used by civil aviation, typically around one-third of total costs, with detailed justifications provided for each consortium and partner. The paper includes operational cost estimates for the ACFJ and PECASUS consortia. Charging parameters were also evaluated, with "departures" chosen as the most reliable and inclusive metric for cost distribution. The next steps involve drafting a formal agreement and implementing the selected cost recovery model.

**C-DEC 227/3 - Cost recovery for space weather information services:**

7. The Council considered this item on the basis of C-WP/15447, which pursuant to C-DEC 225/2 and C-DEC 223/6, provided an overview the work undertaken toward the establishment of a global cost recovery mechanism for the ICAO space weather information service, and the options that had been considered for that purpose. The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC).

8. Following consideration, the Council:

- a) approved the selection of option 2, a global user charge as the global cost recovery mechanism to be further developed to space weather information services, on the understanding that this was currently the most suitable cost recovery mechanism in the application of cost recovery for the ICAO space weather information service; and
- b) requested that the Secretariat:
  - i. prepare a proposal on how the selected option would be best implemented, including a draft Arrangement/Agreement, as well as an outline of the envisaged role of ICAO and the Council in this context, to be presented at a future session of the Council;
  - ii. present a proposal for the establishment of an independent oversight body, in line with ICAO's internal procedures, to be approved by the Council, for the purpose of ensuring that the service provider cost allocated to aviation is reasonable, on the understanding that this oversight is separate from the continuous oversight function to be determined during the Arrangement/Agreement development process; and
  - iii. organize an Informal Briefing during the 228th Session of the Council on the cost recovery for space weather information services, including details of the option 2, as recommended by the Collaborative Group and taking into account other issues of concern as raised by the ATC.

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**229th Session (June 2023)**

**C-WP/15490** details the collaborative drafting of the Space Weather Information Service Cost Recovery Agreement (SWIC), modeled after existing agreements such as the Danish/Icelandic Joint Financing Agreements and SADIS.

The proposed SWIC would be administered by a newly formed SWIC Administration Group (SWAG), composed of representatives from five ICAO regional planning groups. An Independent Oversight Task Force has been established to ensure that cost allocations to aviation are reasonable. This task force has reviewed documentation, engaged with service providers, and prepare a report for Council approval.

**C-DEC 229/5 - Developments in the Establishment of Cost Recovery for the Provision of Space Weather Information Services:**

9. The Council considered this item on the basis of C-WP/15490, which presented the

progress of the work towards the development of a cost recovery mechanism for the provision of space weather services. The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC). In doing so, the Council agreed to waive the requirement in Rule 26 of the *Rules of Procedure for the Council*, given that the ATC oral report had not been made available 72 hours before this meeting.

10. Following consideration, the Council:

- a) agreed that the Secretariat should continue its work to elaborate the draft space weather information services Agreement, taking into account the views of the ATC, as outlined in the Committee's oral report, and in this connection, requested that an informal briefing on this subject be organized during the 230th Session, with a view to providing the Council with the additional information required to facilitate its further deliberations in this regard, and with a view to addressing the questions and comments contained in the Annex to the ATC oral report;
- b) requested the Secretariat to consider and further elaborate the possible legal implications associated with the potential role of ICAO as Administrator under the Agreement, particularly with the respect to the settlement of potential disputes between the Parties to the Agreement; and
- c) agreed that the Independent Oversight Task Force Report would be circulated in advance of the 230th Session and within a timeframe that would provide Delegations with sufficient time for consideration and consultation, on the understanding that a formal decision for approval in this regard would be taken subsequently during the Session.

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### 230th Session (November 2023)

**C-WP/15518** presents the finalized draft of the Arrangement on the Sharing of Costs for the ICAO Space Weather Information Service. It outlines the legal, financial, and operational framework for implementing a global cost recovery mechanism, following the end of the initial three-year cost-free period in November 2022.

The Arrangement establishes a user charge system whereby aircraft operators will contribute to the costs of space weather services based on the number of departures (both scheduled and non-scheduled, domestic and international). The cost recovery mechanism, known as SWIC (Space Weather Information Service Cost Recovery), will be governed by the SWIC Administrative Group (SWAG), composed of representatives from ICAO regional planning groups. The Administrator, potentially ICAO, if agreed by the parties, will manage billing, cost reconciliation, and reporting. The Arrangement includes annexes detailing service scope, financial procedures, and methodologies for user charge calculation.

### **C-DEC 230/5 - Cost Recovery for the Provision of Space Weather Information Services:**

3. The Council considered this item on the basis of C-WP/15518, which presented the progress of the ongoing work towards the development of a cost recovery mechanism for the provision of **space weather information services, including the proposed draft Arrangement on the Sharing of Costs of Space Weather Information Services**. The Council also had for consideration an oral report from Chairperson of the Air Transport Committee (ATC), which presented a summary of the discussions from



the ATC's informal meeting on this subject, which was held on 26 October 2023. In doing so, the Council agreed to waive the requirement in Rule 26 of the *Rules of Procedure for the Council*, given that the ATC oral report had not been made available 3 days before this meeting.

4. Following consideration, the Council:
- a) expressed its appreciation to the Secretariat for their continued efforts to further refine and clarify the proposed draft Arrangement on the Sharing of Costs of the Space Weather Information Service;
  - b) took note of the concerns raised and the substantive issues identified by the ATC over the course of its informal meeting, as reflected in its oral report and the summary of discussions appended thereto, as well as the points raised by the Council over the course of its deliberations on this item, and in this connection, invited those Representatives with specific comments on the contents of the ATC summary of discussions to submit them to the Chairperson of the ATC, accordingly;
  - c) given that the proposal was not considered to have achieved an adequate level of maturity to address all outstanding issues, agreed to defer taking a final decision on this matter, on the understanding that consultations would continue among all stakeholders and that the Secretariat would continue to develop the draft Arrangement taking into account the comments of the ATC;
  - d) with a view to establishing a way forward to address this issue and in order to continue to advance the work in this regard, agreed to constitute a Small Group under the ATC for this purpose, which would consider, *inter alia*, the matter of issuing a State Letter to gauge the views of Member States;
  - e) agreed, on the basis of d) above, to delegate authority to the President of the Council in order to determine, in consultation with the Chairperson of the ATC, the composition of the Small Group, on the understanding that due consideration would be given to ensuring equitable gender and geographical representation; and
  - f) invited the Small Group to report to the Council via the Air Transport Committee on the progress of its work, during the 231st Session.

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### **231st Session (March 2024)**

Oral Report presented by the Chairperson of the Small Group on Cost Recovery for the Provision of Space Weather Information Services.

### **C-DEC 231/6 - Cost Recovery for the Provision of Space Weather Information Services:**

3. The Council considered this item on the basis of an oral report presented by the Chairperson of the Small Group on Cost Recovery for the Provision of Space Weather Information Services (SWIS). The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC).

4. Following consideration, the Council:
- a) recalled its earlier decision on this subject (C-DEC 230/5, refers), and in doing so noted the progress made by the Small Group to date, as reported in its oral report;
  - b) further noted the comments made by the Chairperson of the SWIS in relation to the status of the current operational arrangements for the provision of space weather information services, while at the same time acknowledging that further consideration of these issues would be required;
  - c) invited the Small Group on SWIS to continue to advance its work, particularly with respect to the application of ICAO key charging principles, as contained in *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082), to the cost recovery of the global space weather information services; and
  - d) requested the Small Group to continue to report on its progress to the Council, through the ATC, and for the next report in this regard to be presented during the 232nd Session.
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#### **232nd Session (June 2024)**

Oral Report presented by the Chairperson of the Small Group on Cost Recovery for the Provision of Space Weather Information Services.

#### **C-DEC 232/11 - Cost Recovery for the Provision of Space Weather Information Services:**

7. The Council considered this item on the basis of an oral report from the Chairperson of the Small Group on Cost Recovery for the Provision of Space Weather Information Services (SWIS), which provided a progress update on the work undertaken by the Small Group since last reported to the Council during the 231st Session (C-DEC 231/6, refers). The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC).

8. Following consideration, the Council:
- a) took note of the progress made by the Small Group to date, as reported in its oral report; and
  - b) invited the Small Group on SWIS to continue its work to develop one or more concept notes, as appropriate, containing different options for a cost recovery arrangement, with a view to presenting these concept notes for consideration by the ATC during the 233rd Session.
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#### **233rd Session (November 2024)**

Oral Report and Concept Note presented by the Chairperson of the Small Group on Cost Recovery for the Provision of Space Weather Information Services (SWIS).

**C-DEC 233/8 - Cost Recovery for the Provision of Space Weather Information Services:**

7. The Council commenced its consideration of this item on the basis of an oral report from the Air Transport Committee (ATC), which presented a summary of the Committee's consideration of the Concept Note developed by the Small Group on Cost Recovery for the Provision of Space Weather Information Services (SWIS).

8. Taking into consideration the comments expressed by the Council Representatives over the course of the proceedings, the Council, on the basis of a proposal by the President of the Council, agreed to postpone finalizing its decision on this matter, on the understanding that a proposal would be circulated by the President of the Council in this regard, for further consideration by the Council at a subsequent meeting.

**C-DEC 233/9 - Cost Recovery for the Provision of Space Weather Information Services:**

1. The Council resumed its consideration of this item on the basis of a proposal from the President of the Council (C-DEC 233/8, refers), which was circulated to all Council Representatives via e-mail dated 7 November 2024.

2. Following consideration, the Council:

- a) took note of the substantive issues identified by the ATC over the course of its consideration of this item, as reflected in its oral report, including the concerns raised by some Members of the ATC in relation to proceeding to consult with Member States on the basis of the proposed Concept Note for Option A, which entailed allocating a charge to States based on the number of international departures of air operators registered in that State;
- b) recalling its previous decisions on this matter, acknowledged the concerns expressed by some Council Members regarding ICAO's accountability to deliver a global charging mechanism for the service providers (C-DEC 225/2 and C-DEC 227/3, refer), and the now urgent need for the Council to take a decision in this regard, given the significant risk that the current arrangements for the continued provision of these services could be negatively affected in the absence of a clear way forward;
- c) further acknowledged the concerns of some Council Members regarding the need for the Council to further consider aspects related to the implementation of ICAO Assembly Resolution A41-27 Appendix C, Section I, operative clause 11, such as the legal basis for establishing a global cost recovery mechanism, the role played by ICAO therein and the economic regulation implications for ICAO in such a mechanism;
- d) taking into account the views expressed over the course of its deliberations, agreed to proceed with the State letter consultation with Member States on the basis of two options; namely Option A, and a second option which had been proposed initially to the Council (*cf.* C-DEC 230/5 and C-WP/15518), it being understood that consistent with Option A, a Concept Note would be elaborated for the latter option, which is a Global User Charge (*cf.* C-DEC 227/3 and C-WP/15447), for the purpose of its inclusion in the State letter, and it being further understood that Member States, could, in reviewing the two options proposed, also put forward alternative proposals for consideration, should they wish to do so;

- e) underlined that the State letter should also provide sufficient background information on the work that has already been undertaken by ICAO and the Council on this subject, in order to facilitate Member States' understanding and assessment of the two options being proposed, and in this connection, also noted that any specific implications that may arise from the implementation of either option under consideration should also be outlined in the State letter; and
- f) further requested that the Secretariat, following consultation with and review by the Air Transport Committee, proceed to issue the State letter during the next Session, and to subsequently report to the Council on the outcome of the State consultation process and the feedback received from Member States.

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### 234th Session (February 2025)

**AT-WP/2241** presents a draft State Letter inviting ICAO Member States to provide feedback on two proposed cost recovery options for space weather information services.

The two options under consultation are: Operator Charge – where costs are recovered directly from aircraft operators and a State Charge – where States bear the cost and may recover it through their own mechanisms. The letter notes that while the ACFJ and PECASUS consortia are seeking cost recovery, the CRC Consortium (China and Russia) has extended its free service period until November 2026.

State responses to be compiled and reviewed to inform discussions during the 235th Session of the Council.

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### 235th Session (May 2025)

**C-WP/15722** presents the outcome of the Council's consideration regarding the cost recovery for space weather information services, in response to Assembly Resolution A41-27. It summarizes the lack of consensus on establishing a global cost recovery mechanism following a State letter consultation and discussions within the Air Transport Committee (ATC). While the importance of the services to aviation safety is recognized, divergent views and limited responses have precluded agreement on a sustainable funding model.

### **C-DEC 235/16 - Cost Recovery for the Provision of Space Weather Information Services:**

9. The Council considered this item on the basis of C-WP/15722, which presented an overview of the responses received from ICAO Member States following State Letter Ref. AN 10/1 – 25/38 concerning preferences for a global cost recovery mechanism for Space Weather Information Services (SWIS), and on that basis, provided recommendations for the next steps. The Council also had for consideration an oral report thereon from the Air Transport Committee (ATC), and in doing so, agreed to waive the requirement in Rule 26 of the Rules of Procedure for the Council, given that the oral report of the ATC had not been made available at least three working days before the present meeting.

10. Following consideration, the Council:

- a) took note of the information contained in C-WP/15722, and in particular that the responses from States revealed divergent views on the establishment of a global cost recovery mechanism for SWIS;

- b) agreed that, in light of the current absence of consensus among Member States on the way forward, no further work on a global cost recovery mechanism should be undertaken at this time;
- c) requested the Secretariat to prepare, for consideration by the Council during the current session, a draft Assembly working paper summarizing the outcome of the consultation process and the Council's deliberations on this matter;
- d) agreed to the amendments proposed by the Secretariat to the *Consolidated Statement of Continuing ICAO Policies in the Air Transport Field*, to reflect the Council's current position regarding a cost recovery mechanism for SWIS; and
- e) agreed, based on the lessons learned, to reconvene on the matter during the 236th Session with the objective of urgently reviewing, with the support of the Air Navigation Commission, the decision taken in C-DEC 215/7 dated 13 November 2018 concerning the designation of provider States of space weather information, considering also the possible implications on the recently adopted Amendment 82 to Annex 3 (C-DEC 234/14 dated 2 April 2025), it being understood that this review would seek to identify the next steps that will support the continued provision of space weather information services.

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