



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY





ICAO

ECONOMIC DEVELOPMENT

NO COUNTRY LEFT BEHIND



ICAO/IATA/AFRAA/AFCAC/ACI/CANSO Workshop on Aeronautical Charges

ICAO Progress on Policies and Regulatory Guidance for
Aeronautical User Charges
Dakar, Senegal, 13–14 March 2023

Christian Bechtold

Regional Officer, Technical Assistance and Air Transport
ICAO Western and Central African (WACAF) Office





Overview

- Importance of MET Services in Aviation
- Multiple Dimensions of MET services
- Economic Aspects of Aviation MET Charges
- ICAO/WMO Consultations on MET Charges
- Conclusions



Overview

- **Importance of MET Services in Aviation**
- Multiple Dimensions of MET services
- Economic Aspects of Aviation MET Charges
- ICAO/WMO Consultations on MET Charges
- Conclusions



ICAO

ECONOMIC DEVELOPMENT

NO COUNTRY LEFT BEHIND



Importance of MET Services in Aviation

- Annex 3: provision of meteorological services to international air navigation
- Main objective: safety, efficiency and regularity of air navigation by providing necessary meteorological information to operators, flight crew members, air traffic services, search and rescue services, airport and other aviation stakeholders.
- Technical guidance material:
 - Doc 8896 (Manual of Aeronautical Meteorological Practice)
 - Doc 10003 (Manual on the ICAO Meteorological Information Exchange Model)
 - Doc 10100 (Manual on Space Weather Information in Support of International Air Navigation)
 - Regional and global air navigation plans (AFI ANP, GANP)
 - WMO-No. 1100 (Guide to the Implementation of Quality Management Systems for National Meteorological and Hydrological Services and Other Relevant Service Provider)



Importance of MET Services in Aviation

- ICAO Commitment to States aeronautical MET services:
- Leading, operating and developing organizations requires States to apply quality management principles
 - Objective: continuous improvement of performance
 - Focused approach involving all stakeholders, particularly users





Overview

- Importance of MET Services in Aviation
- **Multiple Dimensions of MET services**
- Economic Aspects of Aviation MET Charges
- ICAO/WMO Consultations on MET Charges
- Conclusions



Multiple Dimensions of MET Services

Minimum Reporting Areas for MET in Aviation

1. Flight Briefing Services
2. Met. observations and report services
3. Aeronautical meteorological forecasts
4. Aeronautical meteorological warnings services
5. Aeronautical climatological information services
6. SIGMET services
7. AIRMET services
8. GAMET services
9. Aircraft Reports
10. WAFS services
11. IAVW services
12. TCAC services
13. Space weather advisory information
14. Remote Monitoring and Management (RMM) services
15. Quality Management System



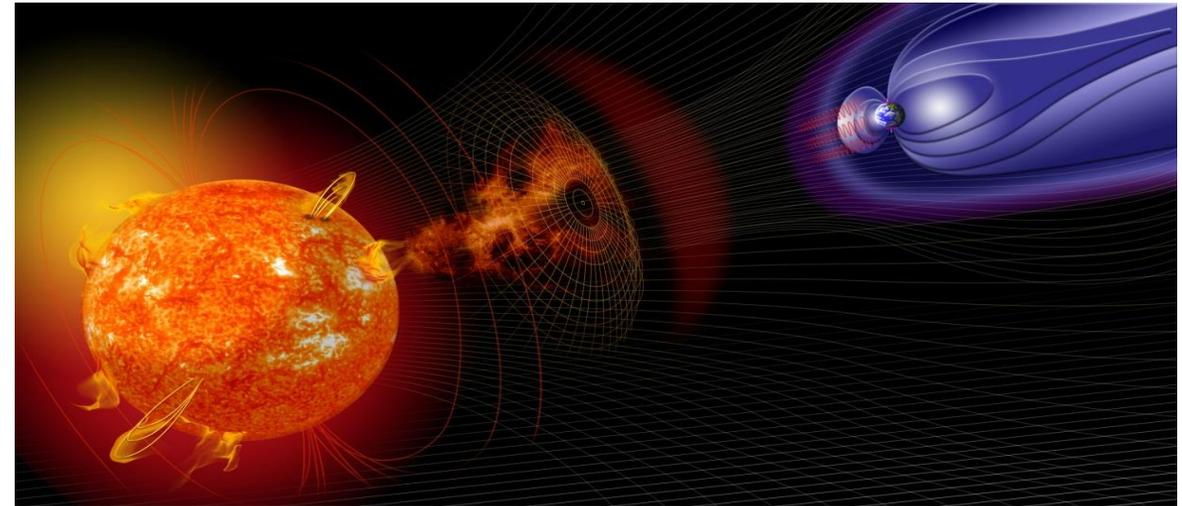
Multiple Dimensions of MET Services

- Equal importance to other sectors of the economy, e.g.:
 - Road, maritime and railway transport
 - Agriculture
 - Oceanography
 - Mining
 - Wildlife management
 - Construction
- Dynamic scope: impact of space weather on aeronautical operations



Multiple Dimensions of MET Services

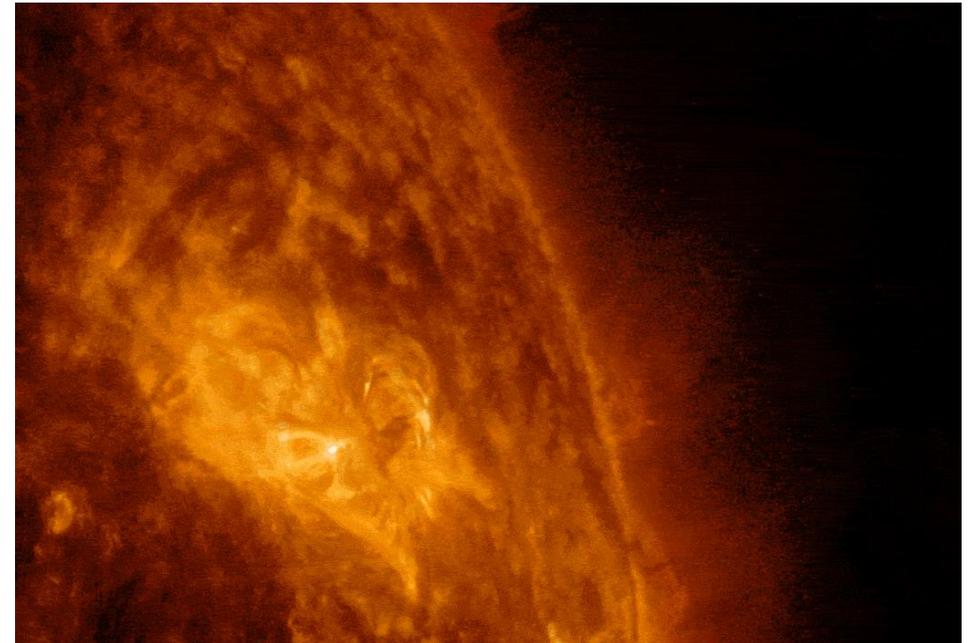
- Space weather
 - Created by activity on the sun's surface and solar wind
 - Can affect Earth and rest of solar system
 - Influences functioning and reliability of space-borne and ground-based systems and services
 - ➔ Potential impact on aviation





Multiple Dimensions of MET Services

- Magnetic activity within the sun can cause intense solar storms with strong solar winds
- During solar storms, flares (sudden explosion of energy) can break out and release high levels of radiation
- Intense solar flares can interfere with radio communications on Earth and with satellites





Overview

- Importance of MET Services in Aviation
- Multiple Dimensions of MET services
- **Economic Aspects of Aviation MET Charges**
- ICAO/WMO Consultations on MET Charges
- Conclusions



Economic Aspects of Aviation MET Charges

- Annex 3 and technical guidance material have proven the relevance of MET services in aviation
- Importance will increase in the future with development of science and technology
- Contribution of MET to safety of civil aviation should not impose inappropriate economic burden on international aviation



Economic Aspects of Aviation MET Charges

- Assembly Resolution A41-27
 - States to cooperate in the recovery of costs of multinational air navigation facilities and services and to consider the use of the ICAO policy guidance on the allocation of GNSS costs
 - Council to continue to update, as required, guidance on funding of appropriate oversight functions and on the allocation of GNSS costs, as well as to address the cost recovery for provision of aeronautical meteorological (MET) service for international civil aviation
 - 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



Overview

- Importance of MET Services in Aviation
- Multiple Dimensions of MET services
- Economic Aspects of Aviation MET Charges
- **ICAO/WMO Consultations on MET Charges**
- Conclusions



ICAO/WMO Consultations on MET Charges

- ICAO/WMO AFI Meeting in Aug-2022
 - ICAO and WMO to develop a list of Members that require support (information, legislation, and guidelines) towards the implementation of cost recovery for aeronautical meteorological service
- WMO participated in A41 and contributed to the review of Resolution A41-27



Overview

- Importance of MET Services in Aviation
- Multiple Dimensions of MET services
- Economic Aspects of Aviation MET Charges
- ICAO/WMO Consultations on MET Charges
- **Conclusions**



Conclusions

- General comments:
 - ICAO supports user charges which are really justified
 - ICAO encourages investment in aviation for recovery during services provision
 - Charges collected in air transport should be reinvested in the development of aviation



Conclusions

- **Development of charges**
 - Should be based on charging principles and balanced approach
 - Excessive charges with negative impact on users should be avoided
 - Cost-sharing model should be developed to share costs equitably with other sectors



Conclusions

- MET would be more transparent after the completion of the work in progress in the Council



Thank You!