

MEMORANDUM OF COOPERATION

NAT-I-9406 between the United States of America and the European Union

WHEREAS the United States of America and the European Union have as a common purpose the promotion and development of cooperation in civil aviation research and development; and

WHEREAS such cooperation will encourage the development and safety of civil aeronautics in the United States of America and the European Union;

NOW THEREFORE, the United States of America and the European Union (collectively, the 'Parties,' and individually, a 'Party') agree to undertake joint programs in accordance with the following terms and conditions:

Article I

Objective

A. This Memorandum of Cooperation, including its Annexes and Appendices (the 'Memorandum'), establishes the terms and conditions for mutual cooperation in the promotion and development of civil aviation research and development. For this purpose the Parties may, subject to the availability of appropriated funds and other necessary resources, provide personnel, resources, and related services to cooperate to the extent called for in the Annexes and Appendices to this Memorandum.

B. The objectives of this Memorandum may be achieved by cooperation in any of the following areas:

1. the exchange of information regarding programs and projects, research results, or publications;
2. the execution of joint analyses;
3. the coordination of research and development programs and projects, and their execution based on shared effort;
4. the exchange of scientific and technical staff;
5. the exchange of specific equipment, software, and systems for research activities and compatibility studies;
6. the joint organisation of symposia or conferences; and
7. reciprocal consultations with the aim of establishing concerted action in appropriate international bodies.

C. Subject to applicable laws, regulations and policies, as may be amended or modified, the Parties shall foster, to the fullest extent practicable, the involvement of participants in cooperative activities under this Memorandum in view of providing comparable opportunities for participation in

their research and development activities. The Parties shall involve participants in the cooperative activities, which shall be conducted on a reciprocal basis in accordance with the following principles:

1. mutual benefit;
2. comparable opportunities to engage in cooperative activities;
3. equitable and fair treatment;
4. timely exchange of information which may affect cooperative activities; and
5. transparency.

D. Such cooperative activities shall take place pursuant to specific Annexes and Appendices defined in Article II.

Article II

Implementation

A. This Memorandum shall be implemented through specific Annexes and Appendices to this Memorandum. These Annexes and Appendices shall describe, as appropriate, the nature and the duration of cooperation for a specific area or purpose, treatment of intellectual property, liability, funding, allocation of costs, and other relevant matters. Unless explicitly stated otherwise, in case of an incompatibility between a provision in an Annex or Appendix and a provision in this Memorandum, the provision in the Memorandum shall have precedence.

B. Representatives from the United States of America and the European Union shall meet periodically to:

1. discuss proposals for new cooperative activities; and
2. review the status of ongoing activities that have been undertaken pursuant to an Annex or Appendix to this Memorandum.

- C. The coordination and facilitation of cooperative activities under this Memorandum shall be accomplished on behalf of the Government of the United States of America by the Federal Aviation Administration and on behalf of the European Union by the European Commission.
- D. The designated offices for the coordination and management of this Memorandum, and where all requests for services under this Memorandum should be made, are:
1. for the United States of America:

Federal Aviation Administration
Office of International Aviation
Wilbur Wright Bldg., 6th Floor, East
600 Independence Ave., S.W.
Washington, D.C. 20591
USA

Tel. +1 2023858900
Fax +1 2022675032
 2. for the European Union:

European Commission
Directorate-General for Mobility and Transport
Directorate for Air Transport
1040 Brussels
BELGIUM

Tel. +32 22968430
Fax: +32 22968353
- E. Technical program liaisons for specific activities shall be established as indicated in the Annexes and Appendices to this Memorandum.
- C. The Joint Committee may invite the participation of subject-specific experts on an ad hoc basis. The Joint Committee may establish technical working groups and oversee their work and the work of committees and groups established in the specific Annexes and Appendices. The Joint Committee shall develop and adopt internal governing procedures.
- D. All decisions of the Joint Committee shall be taken by consensus of the two Parties, which comprise the Joint Committee. These decisions shall be in writing and signed by the Parties' representatives on the Joint Committee.
- E. The Joint Committee may consider any matter related to the functioning of this Memorandum and its Annexes and Appendices. In particular it shall be responsible for:
1. providing a forum for discussion, within the scope of this Memorandum and its Annexes and Appendices, of:
 - a. issues that may arise and changes that may affect the implementation of this Memorandum and its Annexes and Appendices;
 - b. common approaches to the introduction of new technologies and procedures, research and evaluation programs, and other areas of mutual interest; and
 - c. draft regulations and legislation by either Party that could affect the interests of the other Party, within the scope of this Memorandum and its Annexes and Appendices;
 2. as appropriate, adopting additional Annexes to this Memorandum and Appendices thereto;
 3. as appropriate adopting amendments to Annexes to this Memorandum and Appendices thereto; and
 4. making proposals, as appropriate, to the Parties to otherwise amend this Memorandum.

Article III

Executive Management

- A. The Parties hereby establish a Joint Committee, which shall be responsible for ensuring the effective functioning of this Memorandum and shall meet at regular intervals to evaluate the effectiveness of its implementation.
- B. The Joint Committee shall be composed of representatives of:

1. the United States of America, which shall be the Federal Aviation Administration (FAA, co-chair); and
2. the European Union, which shall be the European Commission (co-chair) assisted by representatives of the European Union's Member States.

Article IV

Exchange of personnel

The Parties may exchange technical personnel as required to pursue the activities described in an Annex or Appendix to this Memorandum. All such exchanges shall be in accordance with the terms and conditions set forth in this Memorandum, its Annexes and Appendices. Technical personnel exchanged by the Parties shall perform work as specified in the Annex or Appendix. Such technical personnel may be from United States or European Union agencies or contractors, as mutually agreed.

*Article V***Equipment loan arrangements**

Equipment may be loaned by one Party (the 'Lending Party') to the other Party (the 'Borrowing Party') under an Annex or Appendix to this Memorandum. The following general provisions shall apply to all loans of equipment unless otherwise specified in an Annex or Appendix:

- A. the Lending Party shall identify the value of the equipment that is to be loaned;
- B. the Borrowing Party shall assume custody and possession of the equipment at the Lending Party's facility as designated by the Parties in the Annex or Appendix. The equipment shall remain in the custody and possession of the Borrowing Party until it has been returned to the Lending Party in accordance with paragraph H below;
- C. the Borrowing Party shall, at its own expense, transport any equipment to the facility designated by the Parties in the Annex or Appendix;
- D. the Parties shall cooperate in securing any export licenses and other documents required for the shipment of the equipment;
- E. the Borrowing Party shall be responsible for installing the equipment at the facility designated by the Parties in the Annex or Appendix. The Lending Party shall, if necessary, provide assistance to the Borrowing Party for installing the equipment that is lent on the basis of terms agreed on by the Parties;
- F. during the period of the loan, the Borrowing Party shall operate and maintain equipment in proper condition, ensure the continued operability of the equipment, and permit inspection by the Lending Party at any reasonable time;
- G. the Lending Party shall assist the Borrowing Party in locating sources of supplies for common items and parts peculiar which are not readily available to the Borrowing Party;
- H. upon the expiration or termination of the pertinent Annex or Appendix or this Memorandum, or when the use of the equipment is complete, the Borrowing Party shall return the equipment to the Lending Party at the Borrowing Party's expense;
- I. in the event of loss or damage of any equipment loaned under this Memorandum and for which the Borrowing Party assumed custody and possession, the Borrowing Party, at the Lending Party's discretion, shall repair or compensate the Lending Party for the value (as identified by the Lending Party in paragraph A above) of the lost or damaged equipment;
- J. any equipment exchanged under this Memorandum shall be solely for research, developmental and validation purposes

and shall not be used in any way whatsoever for active civil aviation or other operational use;

- K. any transfers of technology, equipment or other items pursuant to this Memorandum shall be subject to the applicable laws and policies of the Parties.

*Article VI***Funding**

- A. Unless otherwise specified in an Annex or Appendix to this Memorandum, each Party shall bear the costs of the activities it performs pursuant to this Memorandum.
- B. Memorandum number NAT-I-9406 has been assigned by the United States to identify this cooperative program and shall be referenced in all correspondence related to this Memorandum.

*Article VII***Release of information**

- A. Except as required by applicable law or by prior written agreement between the Parties, neither Party shall release any information or material pertinent to the tasks or related to the agreed programs under this Memorandum and its Annexes and Appendices to third parties other than (i) contractors or subcontractors engaged in the tasks or programs insofar as they are necessary for the execution of those tasks and programs; or (ii) other governmental authorities of the Parties.
- B. If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably be expected to become, unable to meet the non-disclosure provisions of this Article, it shall immediately and prior to disclosure inform the other Party. The Parties shall thereafter consult to identify an appropriate course of action.

*Article VIII***Intellectual property rights**

- A. A Party providing intellectual property (which for purposes of this Memorandum includes analyses, reports, databases, software, know-how, technical and commercially sensitive information, data, and records, and associated documentation and materials, regardless of form or the media on which it may be recorded) to the other Party in accordance with the terms of an Annex or Appendix to this Memorandum shall retain such proprietary rights in the intellectual property as it had at the time of the exchange. The Party providing a document or other intellectual property pursuant to an Annex or Appendix to this Memorandum shall clearly mark the document or other intellectual property as confidential, proprietary, or a trade secret, as appropriate.

B. Except as may be specified in an Annex or Appendix to this Memorandum, the Party receiving intellectual property from the other Party under this Memorandum:

1. shall not acquire any proprietary rights in the intellectual property by reason of its receipt from the other Party; and
2. shall not disclose the intellectual property to a third party, other than contractors or subcontractors engaged in a program related to an Annex or Appendix to this Memorandum, without the prior written consent of the other Party. In the case of a disclosure to a contractor or subcontractor engaged in the program, the Party making the disclosure shall:
 - a. limit the use of the intellectual property by the contractor or subcontractor to the purposes specified in the applicable Annex or Appendix; and
 - b. prohibit the further disclosure of the intellectual property to third parties by the contractor or subcontractor except where the other Party consents in advance and in writing to the further disclosure.

C. Except as may be specified in an Annex or Appendix to this Memorandum, the proprietary rights in any intellectual property jointly developed by the Parties pursuant to this Memorandum and its Annexes or Appendices shall be shared by the Parties.

1. Each Party shall be entitled to a non-exclusive, irrevocable right in all countries to reproduce, prepare derivative works, publicly distribute, and translate such intellectual property, provided that such reproduction, preparation, distribution and translation does not affect the protection of the intellectual property rights of the other Party. Each Party or its implementing authorities shall have the right to review a translation prior to public distribution.
2. All publicly distributed copies of scientific and technical journal articles, non-proprietary scientific reports and books directly arising from cooperation under this Memorandum and its Annexes or Appendices shall indicate the names of the authors of the work unless an author explicitly declines to be named.

D. If a Party disagrees with the designation of a document or other intellectual property provided by the other Party pursuant to an Annex or Appendix to this Memorandum as confidential, proprietary, or a trade secret, then the Party disagreeing with the designation shall request consultations with the other Party to address the issue. The Consultations may be held in conjunction with a meeting of the Joint Committee or a meeting of such other committees as may be established under an Annex or Appendix to this Memorandum.

Article IX

Immunity and liability

- A. The Parties shall address immunity and liability issues associated with activities under this Memorandum in the relevant Annex or Appendix as appropriate.
- B. The Parties agree that all activities undertaken pursuant to this Memorandum and its Annexes or Appendices shall be performed with due professional care and that every reasonable effort shall be made to minimise potential risks to third parties and to fulfil all safety and oversight requirements.

Article X

Amendments

- A. The Parties may amend this Memorandum, its Annexes or Appendices. The Parties shall document the details of any such amendment in a written agreement signed by both Parties.
- B. Amendments of the Annexes or the Appendices to this Memorandum, adopted by the Joint Committee, shall enter into force upon a decision of the Joint Committee pursuant to Article III.D of this Memorandum, signed by the co-chairs of the Joint Committee on behalf of the Parties.

Article XI

Resolution of disagreements

The Parties shall resolve any disagreement regarding the interpretation or application of this Memorandum or its Annexes or Appendices in consultations between the Parties. The Parties shall not refer any such disagreement to an international tribunal or third party for settlement.

Article XII

Entry into force and termination

- A. Pending its entry into force, this Memorandum shall be applied provisionally from the date of signature.
- B. This Memorandum shall enter into force when the Parties have notified each other in writing that their respective internal procedures for its entry into force have been completed, and shall remain in force until terminated.
- C. Any individual Annex or Appendix adopted by the Joint Committee after the entry into force of this Memorandum shall enter into force upon a decision of the Joint Committee pursuant to Article III.D of this Memorandum, signed by the co-chairs of the Joint Committee on behalf of the Parties.

- D. Either Party may terminate this Memorandum or its Annexes or Appendices at any time by providing sixty (60) days' notice in writing to the other Party. Termination of this Memorandum shall not affect the rights and obligations of the Parties under Articles V, VII, VIII and IX. Each Party shall have one hundred twenty (120) days to close out its activities following termination of this Memorandum or its Annexes or Appendices. Termination of this Memorandum also shall terminate all Annexes and Appendices concluded by the Parties pursuant to this Memorandum.

Article XIII

Authority

The United States and the European Union agree to the provisions of this Memorandum as indicated by the signatures of their duly authorised representatives.

Done at Budapest on the third day of March in the year two thousand and eleven.

For the United States of America



For the European Union



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ANNEX I

TO MEMORANDUM OF COOPERATION NAT-I-9406 BETWEEN THE UNITED STATES OF AMERICA AND THE EUROPEAN UNION SESAR-NEXTGEN COOPERATION FOR GLOBAL INTEROPERABILITY

WHEREAS SESAR and NextGen are respectively the European Union's and the United States of America's programmes for developing new generations of air traffic management systems;

WHEREAS the SESAR Joint Undertaking was established by Council Regulation (EC) No 219/2007 of 27 February 2007 for the purpose of managing the SESAR Development phase;

NOW THEREFORE, the United States of America and the European Union (collectively the 'Parties', and individually a 'Party') have agreed as follows:

*Article I***Purpose**

The purpose of this Annex is to implement the Memorandum of Cooperation NAT-I-9406 between the United States of America and the European Union (the Memorandum) by setting forth the terms and conditions under which the Parties shall establish cooperation to ensure global interoperability between their respective Air Traffic Management (ATM) modernisation programmes, NextGen and SESAR, taking into account the interests of civil and military airspace users.

*Article II***Definitions**

For the purpose of this Annex, the term 'validation' means to confirm, throughout the development lifecycle, that the proposed solution, including concept, system, and procedures, complies with stakeholders' needs.

*Article III***Principles**

Within the framework of the NextGen and SESAR programmes and in accordance with the principles set out in Article I.C of the Memorandum, the Parties shall:

- A. as appropriate, allow participation by each other's governmental and industrial entities in their relevant consultative bodies and industrial initiatives, in accordance with applicable laws and regulations, and the governing rules of such bodies and initiatives;
- B. endeavour to provide opportunities to each other's industry stakeholders to contribute to work programs and access information on, and results of, equivalent research and development programs and projects; and
- C. through the High Level Committee established under Article V of this Annex, mutually identify, in attachments to this Annex (Attachments), the domains that allow specific opportunities for participation in each Party's consultative bodies, initiatives, and research programs and projects, in particular those domains that provide for a contribution to high level system definition, such as interoperability, architecture definition, and technical baseline.

The High Level Committee shall monitor the implementation of this Article and shall update the Attachments as necessary.

*Article IV***Scope of work**

- A. The scope of the work is to contribute to ATM research, development, and validation for global interoperability. The work may include, but is not limited to, the activities set out in paragraphs 1 to 5 of the present Article.

1. Transversal Activities

Transversal activities cover those tasks that are not specific to any one operational or technical development, but have interdependencies across the SESAR and NextGen Programs. These activities are of particular importance to the cooperation, as any diverging approach potentially has wide-reaching material implications for harmonisation and interoperability. In this area, the Parties intend to address:

- a. operations concept and roadmap;
- b. separation provision;
- c. road-mapping including standardisation and regulation with a view to facilitate implementation synchronisation;

- d. business case and investment planning;
- e. environment;
- f. the coordination of technical efforts in support of global and ICAO standardisation activities in the field of ATM modernisation;
- g. the synchronisation and consistency of avionics roadmaps, in order to ensure best economic efficiency for airspace users; and
- h. coordinated delivery of technical and operational changes that achieve/maintain seamless operations from an airspace user's perspective.

2. Information Management

The key focus on Information Management is to ensure timely distribution of accurate and relevant ATM-related information across the stakeholder community in a manner that is seamless (interoperable), secure and supportive of collaborative decision making. In this area, the Parties intend to address:

- a. system Wide Information Management (SWIM) interoperability;
- b. aeronautical Information Management (AIM) interoperability; and
- c. meteorological information exchange.

3. Trajectory Management

Trajectory Management encompasses air/air and air/ground exchange of four-dimensional (4D) trajectories requiring a consistent approach to terminology, definition and exchange of flight information at all times and in all flight phases. In this area, the Parties intend to address:

- a. common trajectory definition and exchange;
- b. flight planning and dynamic flight plan updates;
- c. traffic management (including trajectory integration and prediction);
- d. Unmanned Aircraft Systems (UAS) integration into ATM; and
- e. the convergence of the SESAR and NextGen concepts of operations, the service definitions and their applications including the 4D trajectory definition and exchange format operations.

4. Communications, Navigation, Surveillance (CNS) & Airborne Interoperability

CNS and airborne interoperability includes planning airborne equipment and the development of mutually interoperable air/air and air/ground applications and systems. In this area, the Parties intend to address:

- a. airborne interoperability, including:
 - i. Airborne Collision Avoidance System (ACAS);
 - ii. avionics roadmap; and
 - iii. Airborne Separation Assistance Systems (ASAS) for air/air and air/ground separation assistance;
- b. communications, including:
 - i. data-link services and technology; and
 - ii. flexible communication architecture;
- c. navigation, including:
 - i. Performance Based Navigation; and
 - ii. Global Navigation Satellite System (GNSS) applications for en route and approach, including approach with vertical guidance;
- d. surveillance, including:
 - i. Automatic Dependent Surveillance (ADS) services and technology; and
 - ii. Ground surveillance.

5. Collaborative Projects

Collaborative Projects include ad hoc projects for which the Parties agree that focused coordination and collaboration is needed. In this area, the Parties intend to address:

- a. Atlantic Interoperability Initiative to Reduce Emissions (AIRE); and
 - b. improvements of monitoring and position tracking of aircraft over oceanic and remote regions.
- B. The Parties shall, as necessary, produce on a reciprocal basis, either individually or jointly for exchange between them, reports describing concepts of use, models, prototypes, evaluations, validation exercises, and comparative studies related to the technical and operational aspects of ATM. Evaluations and validations may use a range of tools such as simulations and live trials.

Article V

Management

Subject to the availability of funds, the Parties shall establish and manage projects and activities and ensure that the work in progress remains pragmatic, timely and result-oriented. To this end, the following management levels shall be established:

- A. a High Level Committee, which shall be composed of an equal number of participants from the European Commission, which may be assisted by the SESAR Joint Undertaking, and from the Federal Aviation Administration (FAA);
1. the High Level Committee shall be co-chaired by one representative each from the European Commission and the FAA. The High Level Committee shall meet at least once a year to:
 - a. oversee SESAR-NextGen cooperation;
 - b. assess the achieved results;
 - c. decide on the launch of new projects and activities upon a proposal from the Coordination Committee defined below;
 - d. decide on proposals for new Appendices or amendments to existing Appendices to this Annex, which it shall submit to the Joint Committee for approval in accordance with Article III.D of the Memorandum;
 - e. give instructions to the Coordination Committee defined below; and
 - f. monitor the implementation of Article III of this Annex and, as necessary, consult on industry participation mechanisms or refer questions to the Joint Committee established under the Memorandum;
 2. the High Level Committee shall establish its working procedures and all decisions shall be taken by consensus between the co-chairs;
 3. the High Level Committee shall report to the Joint Committee established pursuant to Article III of the Memorandum;
- B. a Coordination Committee, which shall be composed of an appropriate and limited number of participants from the SESAR Joint Undertaking and from the FAA Air Traffic Organization, which may both be assisted by experts;
1. the Coordination Committee shall be co-chaired by one representative each from the SESAR Joint Undertaking and the FAA Air Traffic Organization. The Coordination Committee shall meet at least twice a year to:
 - a. monitor the progress of ongoing joint projects and activities as defined in the Appendices;
 - b. ensure the efficient execution of the Appendices through the Working Groups defined below;
 - c. ensure the efficient implementation of Article III of this Annex;
 - d. prepare reports to the High Level Committee; or
 - e. consider proposals for submission to the High Level Committee, including for new Appendices or amendments to existing Appendices to this Annex;
 2. the Coordination Committee shall establish its working procedures and all decisions shall be taken by consensus between the co-chairs;

- C. Working Groups dedicated to specific projects or activities described in the Appendices. Each Working Group shall be composed of an appropriate and limited number of participants. The Working Groups shall meet as necessary, shall comply with instructions given by the Coordination Committee and shall report to it on a regular basis.

Article VI

Immunity and liability

The Parties shall address immunity and liability issues associated with activities under this Annex in the relevant Appendix, as appropriate.

Article VII

Implementation

- A. All work provided under this Annex shall be described in Appendices, which, upon their entry into force, shall become part of this Annex.
- B. Each Appendix shall be numbered sequentially and contain a description of the work to be performed by the Parties or the entities they designate to carry out the work, including the location and planned duration of the work; the personnel and other resources required to accomplish the work; the estimated costs; and any other pertinent information concerning the work.

Article VIII

Financial provisions

Funding of work to be performed under this Annex shall be provided in accordance with Article VI of the Memorandum.

Article IX

Points of contact

- A. The designated offices for the coordination and management of this Annex are:

1. for the United States of America:

Africa, Europe & Middle East Office, AEU-10
Federal Aviation Administration
Wilbur Wright Bldg., 6th Floor, East
600 Independence Avenue, S.W.
Washington, D.C. 20591
USA

Tel. +1 2023858905
Fax +1 2022675032

2. for the European Union:

Single European Sky and ATC Modernisation Unit
Directorate-General for Mobility and Transport
Directorate for Air Transport
European Commission
Rue de Mot 24
1040 Brussels
BELGIUM

Tel. +32 22968430
Fax +32 22968353

- B. technical program liaison for specific activities shall be established as indicated in the Appendices to this Annex.

Article X

Entry into force and termination

- A. Pending its entry into force, this Annex shall be applied provisionally from the date of signature.
- B. This Annex shall enter into force when the Parties have notified each other in writing that their respective internal procedures for its entry into force have been completed, and shall remain in force until terminated in accordance with Article XII of the Memorandum. Termination of this Annex shall terminate all Appendices concluded by the Parties pursuant to this Annex.

*Article XI***Authority**

The United States of America and the European Union agree to the provisions of this Annex as indicated by the signatures of their duly authorised representatives.

Done at Budapest on the third day of March in the year two thousand and eleven.

For the United States of America



For the European Union


