

PROJECT AGREEMENT BETWEEN  
THE FEDERAL AVIATION ADMINISTRATION  
OF THE U. S. DEPARTMENT OF TRANSPORTATION

AND

THE DEPARTMENT OF CIVIL AVIATION  
OF THE MINISTRY OF TRANSPORT AND PUBLIC WORKS  
OF THE NETHERLANDS

CONCERNING DEVELOPMENT AND IMPLEMENTATION OF  
MICROWAVE LANDING SYSTEM

I. AUTHORITY

This Project Agreement (hereinafter referred to as this Agreement) is entered into pursuant to Article III (d) of the Memorandum of Understanding concerning Cooperation in the Field of Transportation between the Department of Transportation of the United States of America and the Ministry of Transport and Public Works of the Netherlands, signed at Washington, D.C., on September 28 and at The Hague on October 6, 1977.

II. PURPOSE

This Agreement is intended to establish cooperation between the Federal Aviation Administration (FAA) of the U.S. Department of Transportation and the Department of Civil Aviation (DCA) of the Ministry of Transport and Public Works of the Netherlands, hereinafter referred to as the Parties. This Agreement identifies and defines the requirements of the Parties to establish cooperation in the implementation of the Microwave Landing System (MLS) with a view toward avoiding unnecessary duplication of effort and minimizing costs to both Parties.

While pursuing the development and implementation of MLS in concert with the International Civil Aviation Organization (ICAO) All Weather Operations Panel's (AWOP) revised terms of reference and its approved MLS work program, the Parties recognize that extensive work must be accomplished for the timely worldwide transition from instrument landing systems (ILS) to MLS in accordance with the ICAO Transition Plan #2, and agree that:

- 1) close coordination between FAA and DCA program managers will be maintained in order that results from joint experimentation, analysis, or requirement reappraisal can be incorporated into the ICAO MLS Work Program on a mutually agreeable basis; and
- 2) an exchange of specialists and technical data will be effected for active participation in the other Party's program, if necessary. This will include operational personnel for simulator and flight evaluations. Critical program activities requiring joint FAA/DCA coordination and participation are listed in the Annex.

### III. POINTS OF CONTACT

The designated points of contact for this agreement are:

Mr. Dennis B. Cooper  
 Federal Aviation Administration  
 International Technical Staff  
 ADL-14  
 800 Independence Avenue, S.W.  
 Washington, D.C. 20591  
 Phone: (202) 426-3256

Mr. David Schrier  
 ATS-COM, Policy Division,  
 Section 2  
 Department of Civil Aviation  
 Koninginnegracht 19-21  
 P. O. Box 20903  
 The Hague, Netherlands 2500 EX  
 Phone: (70) 74 7458

The designated officers may delegate to authorized program personnel, as appropriate, authority to participate in either FAA's or DCA's programs.

The project officers will generally manage cooperative activities under this Agreement, including the development of mutually acceptable statements of tasks and related schedules to be performed under the Agreement. Annex 1 describes the initial task activity under this Agreement.

#### IV. FUNDING

- A. The participation of each Party in the project is subject to the availability of appropriated funds.
- B. Each Party shall bear the direct costs (e.g., salary, travel, subsistence) associated with the participation of its own personnel in the project.
- C. Transfer of funds between the Parties is not envisioned in connection with the project except as agreed to by the Parties.

#### V. DURATION

This Agreement shall enter into force upon signature and shall remain in force for a period of four (4) years. It may be terminated at any time by either Party providing 90 days' notice in writing. It may be renewed by mutual agreement of the Parties in writing.

**VI. AMENDMENTS**

This Agreement may be amended at any time by mutual agreement of the Parties in writing.

**VII. DISCLOSURE OF INFORMATION**

In connection with exchanges of technical data between FAA and DCA, any conditions or limitations placed upon further dissemination of the data by the Party providing it will be respected by the other in accordance with applicable domestic laws.

**VIII. LIABILITY**

The Parties will make a best effort to ensure the accuracy of all data, but the accuracy of such data is not guaranteed. Each Party will use the other's data at its own risk and may not hold the other Party responsible in the event of claims arising out of the use of said data.

For the Federal Aviation  
Administration of the Department  
of Transportation of the United  
States of America

*Donald D. Engen*

Title Administrator

Date:

21 January 1986

For the Department of Civil  
Aviation of the Ministry of  
Transport and Public Works  
of the Netherlands

*[Signature]*  
Title Director General

Date:

21-1-1986

**ANNEX I  
TO**

**PROJECT AGREEMENT BETWEEN  
THE FEDERAL AVIATION ADMINISTRATION (FAA)  
OF THE U.S. DEPARTMENT OF TRANSPORTATION**

**AND**

**THE DEPARTMENT OF CIVIL AVIATION (DCA)  
OF THE MINISTRY OF TRANSPORT AND PUBLIC WORKS  
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**CONCERNING DEVELOPMENT AND IMPLEMENTATION OF  
MICROWAVE LANDING SYSTEM**

**1. GENERAL**

At the September 4-27, 1985, ICAO Communications/Operations Divisional Meeting held in Montreal, Canada, the future work program of the All Weather Operations Panel (AWOP) was revised to include the operational tasks needed for the implementation of Microwave Landing System (MLS). Priorities were assigned to the individual tasks as well as the capabilities of the AWOP to accomplish this work in a timely manner. The purpose for structuring the work program is to develop at least those specifications needed for the early implementation and operational use of MLS by 1990. After reviewing the implications of the AWOP work program and the respective capabilities of the FAA and DCA, both Parties identified specific candidates for cooperative work which are described in Section 3 below.

## 2. SCOPE OF WORK

The Parties will exchange all pertinent data which they currently maintain regarding the implementation of MLS. The Parties will convene a plenary meeting at a location to be mutually agreed upon. The purpose of this meeting is to establish objectives and schedules for:

### A. Information Exchange

MLS data and information exchange, consolidation, review, and analyses. Additional requirements and sources of data will be identified and the means to obtain it will be agreed upon. Discrepancies and differences will be discussed and, if possible, reconciled.

### B. Joint Research and Development (R&D) Activities

- The scope of the joint research and development program will be outlined.
- The work to be performed under this activity will be divided and assigned.
- The schedule for and results of the work to be performed under the activity will be established.

## 3. TASKS TO BE PERFORMED

### A. Signal Deviation Sensitivity

Information on work to date (short runways, steep angle glide paths, area navigation, etc.) will be exchanged to agree on sensitivity values to be standardized and to determine what additional work needs to be done.

B. MLS Data Definitions

In the United States, there is a continuing effort in conjunction with international work program of AWOP to determine the data content and how to integrate these definitions into the existing MLS signal format. DCA will support this activity by examining how this data shall be displayed and used in the aircraft.

C. Interception Procedures

Substantial work has already been carried out in the Netherlands on this task. FAA will review DCA report material and both Parties will jointly determine necessary future work.

D. Presentation of Selected Azimuth Radial (Pilot Orientation)

For any azimuth radial selected, it seems appropriate to present to the pilot the inbound track corresponding with the selected MLS azimuth radial. Standardization with respect to an unambiguous display of MLS azimuth information should be aimed at. This aspect will be jointly studied by both Parties in more detail.

E. Minimum Length and Maximum Intercept Angle of the Final Approach Segment

Both Parties will initially exchange information on completed research and experiments in this area. Based on

these mutual reviews, both Parties will jointly determine what simulation is required to establish these limits. DCA will conduct simulation. FAA will verify DCA parameters through flight testing and aircraft simulator evaluations since these parameters may be aircraft dependent.

F. Segmented Approach Criteria

Both Parties will conduct evaluations to assist in the development of segmented approach criteria. DCA will support this activity through utilization of their fast time computer simulations and their real time flight simulation capability. FAA will support this activity through flight testing, including utilization of C-141 aircraft. Both Parties need to support Radio Technical Commission for Aeronautics (RTCA) Special Committee 151 and European Commission for Aeronautics (EUROCAE) efforts by providing representation and working papers to advance this work.

G. Definition of Segmented and Curved Approaches

Both Parties will exchange information of current definitions to identify any discrepancies. Both Parties will jointly develop detailed explanations of derived definitions.

As work progresses and by mutual agreement, additional elements may be included in this Annex, as future joint work by an exchange of letters between the Parties.

4. **MEETINGS**

Meetings will be held, as required, in the Netherlands and in the United States to insure technical integration of achievements, adequate distribution of work and avoidance of duplication. Working meetings will be necessary to insure and maintain continuous agreement on the concepts and applications pertinent to international standardization. These meetings are further needed to verify and reassess milestones; evaluate and critique each Party's work and analyses; and to update each part of the accomplishment of the other.

## COOPERATION WITH THE NETHERLANDS

### BACKGROUND

The Memorandum of Understanding (MOU) of September 1977 between DOT and the Ministry of Transport and Public Works (MOT) is the umbrella arrangement for cooperative activities in transportation.

#### A. Cooperative Activities

1. The Coast Guard and MOT/Port of Rotterdam Authority have exchanged data relating to the development of software for use in management of vessel traffic.
2. An FHWA specialist was detailed to MOT (at Dutch expense) in connection with the Dutch development of a model for travel behavior research and a representative from P participated, at Dutch expense, in a follow-up seminar in May 1987 in The Hague.
3. Various information exchanges have taken place in the areas of rail and traffic safety and maritime/shipping policy-related issues.
4. FAA and the Civil Aviation Authority of the MOT signed a project agreement in 1986 concerning the development and implementation of microwave landing system.

#### B. Program Review Meetings

In accordance with the terms of the MOU, reviews of ongoing cooperative activities and proposals for new activity are conducted annually, alternating between the United States and the Netherlands. The Dutch hosted the 1987 meeting in The Hague and we are hosting this year's meeting on May 2-3. The agenda will cover transportation pricing, traffic safety, and transportation policy planning.

### TALKING POINTS

The cooperation dialogue with the Dutch has been active and productive because subjects of mutual interest are carefully selected and the follow-up on both sides is excellent.

PREPARED BY: Melva Cunningham  
P-25  
April 27, 1988