



Treaty Series No. 24 (1982)

Amendments
to the Protocol concerning the
Exploitation of a Pre-Operational
Meteorological Satellite (METEOSAT)
of 17 December 1975

[The Amendments have been accepted by the United Kingdom and entered into force
on 24 November 1980]

*Presented to Parliament
by the Secretary of State for Foreign and Commonwealth Affairs
by Command of Her Majesty
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AMENDMENTS⁽¹⁾
TO THE PROTOCOL⁽²⁾ CONCERNING THE EXPLOITATION
OF A PRE-OPERATIONAL METEOROLOGICAL SATELLITE
(METEOSAT)

Preamble

Amend the first paragraph to read as follows:

“Recalling the terms of ‘the Arrangement between certain Member States of the European Space Research Organisation and the European Space Research Organisation concerning the execution of a meteorological satellite programme’ which was opened for signature at Neuilly-sur-Seine on 12 July 1972⁽³⁾ and entered into force on 29 September 1972 and was amended by the Programme Board on 29 March 1973 and 11 March 1977, (hereinafter referred to as ‘the Arrangement’).”

Amend the sixth paragraph to read as follows:

“Having regard to the decision taken by the Council of the European Space Research Organisation on 14 March 1975 (ESRO/C/MIN/73, item 5),”

Add the following paragraphs at the end:

“Having regard to the decision taken by the ESA Council at its 42nd meeting (ESA/C/MIN/42, item 3.4) to extend the Agency’s mandate for a further period of three years,”

“Having regard to the amendments recommended by the Programme Board on 24 October 1980 (ESA/PB-MET/XXIV/Res. (Final)).”

Article 1.1 Read as follows:

“1. The Governments shall undertake the exploitation of the Meteosat system in two phases, the first one lasting two and a half years and beginning six months *after the first flight unit* has been successfully placed in orbit, *the second lasting three years reckoned from the end of the first phase, subject to two-thirds of the contribution to the relevant financial envelope being assured at that time.*”

Article 1.2 Amend the first sentence to read as follows:

“On behalf of the Governments and *in close agreement* with the meteorological authorities, the Agency shall *exploit the Meteosat system* in accordance with . . .”

In the second sentence, *delete* the words “during this phase”. *Add* a new sentence reading as follows: “The services expected of the Agency may be reviewed on the occasion of the adoption of the annual budget within the framework of the relevant financial envelope.”

⁽¹⁾ The Amendments were unanimously approved at the Twenty-fourth meeting of the Meteorological Satellite Programme Board by Resolution No. ESA/PB-MET/XXIV/Res. (Final) on 24 October 1980 and entered into force on 24 November 1980.

⁽²⁾ Treaty Series No. 44 (1979), Cmnd. 7545.

⁽³⁾ Treaty Series No. 45 (1973), Cmnd. 5304.

Article 2 Read as follows:

“ The Agency shall be responsible for the management and control of the *Meteosat system*.”

Article 5.1 Read as follows:

“ The costs arising from the Agency’s *exploitation of the Meteosat system* shall be borne by the Governments within the limits, *for the first phase*, of a financial envelope of 14·15 million accounting units at mid-1975 prices, and, *for the second phase*, of a financial envelope of 24 million accounting units at mid-1979 prices and 1980 conversion rates.”

Article 5.2 Read as follows:

“ The annual budgets relating to each exploitation phase shall be subject to approval by the Programme Board by a two-thirds majority.”

Article 5.3 Read as follows:

“ Annex B sets out the cost of executing the exploitation of the *Meteosat system* and the scale of contributions relating to each phase.”

Article 9.3, first sentence

Delete the words “ before the expiration of the period mentioned in Article 2 ”.

Article 9, add the following new paragraph, numbered “ 9.5 ”:

“ If the Programme Board establishes, on the basis of a report by the Agency, that the whole of the *Meteosat image-taking mission* has come to a stop for an indefinite period, any Government may withdraw from this Protocol provided that it notifies the depositary Government in writing. Such withdrawal shall take effect three months from the date of the notification in writing. A withdrawing Government shall be required to fund its share of the payment appropriations corresponding to the contract authority voted under the budgets for the current and earlier financial years.”

Article 9, add the following new paragraph, numbered “ 9.6 ”:

“ This Protocol may be extended for a further period by a unanimous decision of the Governments if the *Meteosat system* is functioning satisfactorily at the end of the second phase. In this event, the Programme Board shall adopt the relevant financial arrangements.”

Add a new Article 12, worded as follows:

“ The amendments recommended by the Programme Board on 24 October 1980 and referred to in the Preamble shall enter into force on 24 November 1980.”

Amendments to Annex A to the Protocol

Insert, before the text, the following heading: “ *I—First exploitation phase* ”.

Add, at the end of para. 2, a new section headed “*II—Second exploitation phase*” and reading as follows:

“ 1. **Description of tasks of the Agency**

The essential tasks referred to in Article 1.2 of the Protocol are as follows:

- (a) maintenance of the ground segment facilities defined in section 2.2 of Annex A to the Arrangement; this includes maintenance and refinement of the software;
- (b) operation of these facilities to monitor and control the satellite in orbit;
- (c) analysis of satellite telemetry data and study of satellite performance in orbit; optimisation of operating modes;
- (d) operation of the ground segment facilities to acquire, process and distribute data from a satellite in orbit, as set out in section 2 below;
- (e) storage and retrieval of data acquired by Meteosat as described in section 2 (a) below;
- (f) maintenance of liaison with the users.

“ 2. **Description of products**

The expected products referred to in Article 1.2 of the Protocol are described below:

The quality and quantity of data to be provided during the exploitation of the Meteosat system will depend on the performance of the overall system. The following list gives the data to be supplied if the system performs fully according to specification. If the performance is less good, either initially or as a result of degradation after some time in orbit, then not all items on the list may be available but the Agency will do its best to provide all the items the state of the system allows:

- (a) Images covering the whole disc visible from the satellite will be received every half hour. These will come from the infra-red channel at all times, from the visible channel in daylight and from the water vapour channel when it is switched on. The images will be processed by computer to compensate, as far as possible, for imperfections in the radiometer system. These corrected (preprocessed) images will be stored in a digital archive for a period with a minimum limit of 5 months. Photographic images taken from eight slots per day will form the long-term archives. A data service will be provided with the aid of these archives and will comprise:

- straight tape copies of CCT archive tapes,
- contact prints of the photo archive,
- selective enlargements of photographic material,
- an image bulletin,*
- general documentation.

- (b) The images will be used to find the apparent position of landmarks and hence, in conjunction with other telemetry data, to determine a deformation model for each image which will specify the difference between

the actual location of points in the image and the location they would have if the position and orientation of the satellite were ideal. The deformation models will be stored in the archive and will also be available for use in further processing of the images.

- (e) Provision will be made for rectification of the images, that is to say converted to a projection not dependent on the position or orientation of the satellite. These rectified data may be used in place of the unrectified data in preparing products of the system.
- (d) A selection of image data, suitably edited and annotated, will be disseminated via the satellite. The arrangements for selecting and transmitting data will be flexible so that changes can be made in the light of experience, as directed by the Programme Board. It is expected that the initial selection will include full-disc digital images every three hours, digital and analogue images of the European-Atlantic area every half hour and analogue images covering other areas (in segments) at least once every three hours.
- (e) The non-image data will also be disseminated by the satellite. This will include WEFAX documents based on processed data from Meteosat (e.g. cloud top heights) and charts received from meteorological centres.
- (f) The Meteosat image data will be processed in the Meteorological Information Extraction Centre to obtain estimates of the following meteorological quantities, where possible in each of about 3,000 segments of the image covering the area within the useful field of view of the satellite: (the numbers in brackets give the number of times each day each product will be generated).

- wind, from cloud movement, at as many heights as possible (2),
- sea surface temperature (2),
- cloud top height (4),
- cloud analysis (type and coverage) (4),
- climate data set (1),
- water vapour content (2).

These products will be archived and will be made available to the meteorological community using an appropriate medium, namely one of the following:

- transmission to the Offenbach RTH for dissemination on the meteorological communications network (GTS),
- dissemination via the satellite,
- magnetic tape,
- documents.

- (g) Data transmitted from Data Collection Platforms (DCPs) admitted to the Meteosat Data Collection System will be received by the ground station, edited, annotated and made available to the users.
- (h) Command signals (interrogations) will be transmitted through the satellite to DCPs to meet the agreed requirements of the DCP operators."

Revision clause: number this clause " III ".

Amendments to Annex B to the Protocol

Insert, before the text, the following heading: " *I—First exploitation phase* ".

Add, at the end of para. 2, a new section headed " *II—Second exploitation phase* " and reading as follows:

" 1. COST OF EXPLOITATION TASKS

The financial envelope for the second phase laid down in Article 5.1 of this Protocol is based on the following estimates and on the Agency's responsibility during this exploitation phase of the Meteosat system.

(a) *Follow-up of Meteosat performance in orbit*

The expenditure associated with the follow-up of Meteosat performance is estimated at 1.25 MAU (at mid-1979 prices and 1980 conversion rates), this amount being included in the financial envelope. It covers:

- analysis of satellite telemetry data;
- technical assistance to operations personnel for optimisation of exploitation modes;
- Agency administrative support;
- Agency staff and staff of the consortium charged with the development of the satellite.

(b) *Meteosat system operations*

The financial envelope of 24 MAU is based on the following estimates:

	<i>MAU</i>
Staff expenditure	2.8
Running expenditure	0.4
Facilities	7.2
Capital investment	0.1
Development	0.5
Administrative support	0.8
Support specific to project	0.5
Support on the basis of utilisation	11.7
TOTAL	24.0

(at mid-1979 prices and 1980 conversion rates)

The foregoing amount is based on the tasks described in section II of Annex A to the Protocol and on the present budget structure. This exploitation programme does not include any contingency allowance.

2. SCALE OF CONTRIBUTIONS

Each Government shall contribute to the expenditure resulting from the second phase of exploitation of the Meteosat system by the Agency, under the terms of this Protocol, in accordance with the following scale:

	<i>Government</i>	<i>%</i>
Germany	25·66
Belgium	4·50
Denmark	2·92
France	25·00
Italy	12·46
United Kingdom	14·05
Switzerland	4·10
Other Participants	11·31
TOTAL	<u>100·00</u>

3. INDICATIVE PAYMENTS SCHEDULE

The indicative payments schedule is based on a period extending from 24 November 1980 to 23 November 1983.

				(PA in MAU)
<i>1980</i>	<i>1981</i>	<i>1982</i>	<i>1983</i>	<i>Total</i>
<i>(1 month)</i>			<i>(11 months)</i>	
0·7	8·5	8·0	6·8	24·0

It is understood that the amounts of the 1982 and 1983 budgets shall not, except by unanimous agreement of the Programme Board, exceed the level of the budget laid down for 1981, i.e. 8·5 MAU at mid-1979 prices and 1980 conversion rates."

Renumber para. 4 as " III ": Reports by the Agency on the financial and contracts situation

Replace para. 5 " Revision clause " by the following text:

" IV—Revision clause

The provisions of paragraphs 1, 2 and 3 of sections I and II of this Annex may be revised by a unanimous decision of the Programme Board. The provisions of section III may be revised by a two-thirds majority decision of the Programme Board."