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REVIEW OF THE IMPLEMENTATION OF THE RECOMMENDATIONS AND DECISIONS
ADOPTED BY THE GENERAL ASSEMBLY AT ITS TENTH SPECIAL SESSION

Monitoring of disarmament agreements and strengthening
of international security

Report of the Secretary-General

1. The General Assembly, in its resolution 33/71 J of 14 December 1978, requested the Secretary-General to undertake, with the assistance of a group of qualified governmental experts, a study of the technical, legal and financial implications of establishing an international satellite monitoring agency and to report to the Assembly at its thirty-fourth session on the preliminary conclusions of the group of experts.
2. Accordingly, the Secretary-General appointed a Group of Governmental Experts on the Question of the Establishment of an International Satellite Monitoring Agency, which held two sessions, from 11 to 15 June and from 10 to 14 September 1979. By a letter dated 14 September 1979 addressed to the Secretary-General, the Chairman of the Group submitted a progress report which is annexed to the present report.

ANNEX

Preliminary conclusions of the Group of Governmental Experts on
 the Questions of the Establishment of an International Satellite
 Monitoring Agency

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LETTER OF TRANSMITTAL

14 September 1979

Sir,

I have the honour to submit to you herewith the preliminary conclusions of the Group of Governmental Experts to study the implications of establishing an international satellite monitoring agency, which was appointed in pursuance of paragraph 2 of General Assembly resolution 33/71 J of 14 December 1978.

The preliminary conclusions were elaborated during two sessions held at Geneva from 11 to 15 June and from 10 to 14 September 1979 respectively.

The members of the Group wish to express their appreciation for the assistance they received from the representatives of the International Telecommunication Union and the World Meteorological Organization and the members of the Secretariat of the United Nations.

I have been requested by the Group of Governmental Experts, as its Chairman, to submit to you on its behalf, the attached preliminary conclusions which were unanimously adopted.

Accept, Sir the assurances of my highest consideration.

(Signed) H. BORTZMEYER
Chairman of the Group of Governmental Experts
on the Question of the Establishment of an
International Satellite Monitoring Agency

Mr. Kurt Waldheim
Secretary-General
United Nations
New York, N.Y.

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I. INTRODUCTION

A. Background

1. At the special session of the General Assembly devoted to disarmament, which was convened in New York from 23 May to 30 June 1978, the French delegation submitted a document (A/S-10/AC.1/7) containing a memorandum which set out the proposal to establish an international satellite monitoring agency. Consideration of this proposal was deferred by the Assembly to its thirty-third session; the proposal was listed in paragraph 125 of the Final Document of the Tenth Special Session (resolution S-10/2).

2. The memorandum pointed out that the progress which space technology had made in the field of earth observation satellites constituted a new development in the management of international affairs. It was proposed that "within the framework of current disarmament efforts, this new monitoring method should be placed at the service of the international community".

B. Mandate

3. At its thirty-third regular session, the General Assembly, "convinced of the important contribution which such technology can make to the solution of monitoring problems, taking into account, in particular, the need to provide for international measures which are non-discriminatory and do not constitute interference in the internal affairs of States", adopted resolution 33/71 J, requesting the Secretary-General to obtain the views of Member States on the proposal contained in document A/S-10/AC.1/7 and to undertake, with the assistance of qualified governmental experts, a study on the technical, legal and financial implications of establishing such an agency. The Secretary-General was further requested to report to the Assembly at its thirty-fourth regular session on the replies received from Governments and the preliminary conclusions of the group of experts.

4. In pursuance of this resolution and upon nomination by their Governments, the Secretary-General appointed a Group of Experts which met twice in Geneva, from 11 to 15 June and from 10 to 14 September 1979 under the chairmanship of Mr. H. Bortzmeyer (France). The list of participants is contained in annex II to this report. In the course of its discussions, the Group unanimously arrived at substantive elements of relevance to the proposal to establish an international satellite monitoring agency and at preliminary conclusions which are covered in subsequent sections of this report.

II. SUBSTANTIVE ELEMENTS AND PRELIMINARY CONCLUSIONS

5. In order to reach preliminary conclusions on the technical, legal and financial implications of establishing an international satellite monitoring agency, the experts initiated their work by broadly assessing the general elements of the "state of the art" in space technology, as currently available to them, and by taking into consideration the French memorandum.

A. Substantive elements discussed by the Group

1. State of the art

6. A substantial number of satellites launched each year are military earth-observation satellites used by some countries to monitor crisis areas and to verify disarmament/arms-control agreements. Together with other military satellites such as electronic-reconnaissance, ocean-surveillance and early-warning satellites, military-surveillance satellites represent altogether, according to certain sources, more than 50 per cent of the satellites of all types launched so far. The ground resolution of the military-reconnaissance satellites which are used for close-look surveillance is, according to available information, better than 0.5 m.

7. The important development achieved so far in civilian uses of satellites cannot be disputed. Civilian satellites account for about 25 per cent of all satellites launched so far and their role in various fields such as meteorology, communications, earth-resources surveys, geodesy, navigation and research has been well established. Their utilization has already given birth to certain forms of international co-operation. Most of the data from civilian remote-sensing satellites are accessible to the international community.

8. In general, the capability of existing civilian remote-sensing satellites is not sufficient, at this stage, to ensure a level of performance necessary for detailed observation of crisis areas or for the identification of armaments subject to disarmament agreements. However, considerable progress has already been made, especially under pressure from civilian users, and the expected developments in civilian space technology might well soon give to civilian satellites an increasing performance potential close to that of some military satellites used for area surveillance.

9. Moreover, current indications are that launcher, satellite and image-processing technology is spreading to an increasing number of countries - and this spread may lead to the development of satellites capable of providing imagery of relevance to an international satellite monitoring agency. It is thus relevant to note that the dynamics of technology and civilian user needs for improved data have a bearing on the evolution of the agency.

2. Principal features of the proposal to establish an international satellite monitoring agency

10. The Group gave careful consideration to the proposal to establish an international satellite monitoring agency as outlined in the memorandum annexed to document A/S-10/AC.1/7.

11. This document points out that surveillance satellites have already attained a very high level of precision in their observation capability and play an important role in the verification of bilateral arms-control agreements of certain States and in the monitoring of some crises. It further points out that many United Nations

resolutions have stressed the need for disarmament agreements to be subjected to efficacious international monitoring. The use of observation satellites as a means of conducting such monitoring could help to overcome some of the difficulties encountered in verifying such agreements and thereby lead to progress towards disarmament. Apart from verifying compliance with disarmament agreements, such an agency would, the memorandum suggests, contribute to effective management of crises and thereby strengthen international confidence and security.

12. As regards the technical, financial and organizational issues, the memorandum envisages the establishment of an international satellite monitoring agency in three stages. In the initial stage, the agency's task would be to analyse data provided by countries which operate surveillance satellite systems. During the second stage, the agency would establish data-receiving stations directly linked to observation satellites of various nations, including satellites used for earth-resources survey. As a third stage, the agency would be provided with satellites of its own in order to supplement data made available by States and to minimize the demands imposed upon suppliers of data.

13. Lastly, the memorandum outlines certain specific elements to be considered in connexion with such an agency, including its guiding principles, functions, statute, technical resources and financing.

B. Preliminary conclusions

1. Technical implications

(a) Technical requirements for satellite monitoring

14. In order to verify arms-control and disarmament agreements and to monitor crisis areas, the Group felt that two kinds of data would be needed: data generated by area-surveillance satellites with a ground resolution of about 5 to 3 metres and data from close-look satellites with a ground resolution of about 0.5 metres. The first type of data would make it possible to detect large weapon systems and facilities while the second type would provide for a fairly correct description of most types of armaments. Trends in civilian remote-sensing satellites may well lead to the availability of data close to that from existing area-surveillance satellites. Data from close-look manoeuvrable satellites are available today only in a few national systems.

(b) Monitoring compliance with disarmament/arms-control agreements

15. The verification of compliance by States parties with disarmament or arms-control agreements depends on the nature of the prohibition or control, on the provisions relating to verification and, in this context, on the suitability of surveillance from space. Since these are interconnected issues, the need exists to study satellite verification along with treaty provisions individually. Therefore the Group discussed the possibility of satellite verification for existing disarmament agreements and for some expected future conventions. It was realized

that from a technical point of view some treaties could not be verified by means of satellites (e.g., the 1969 Treaty on the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof), nor could a complete verification process for a certain treaty be performed using satellites only (e.g., the 1963 Partial Test-Ban Treaty, the 1967 Treaty of Tlatelolco, and the 1968 Treaty on the Non-Proliferation of Nuclear Weapons which would require working relationships with the International Atomic Energy Agency, for instance). However, it was agreed among the experts that data supplemented by satellite surveillance could provide essential and timely information on possible non-compliance with the provisions of disarmament or arms-control agreements.

(c) Monitoring crisis situations

16. In the monitoring by satellite of crisis situations, considerable essential data can be generated with close-look satellites. Satellite imagery, however, would in many cases need to be supplemented by additional information to enable the analyst to reach definitive conclusions. Under favourable conditions, dynamic changes in the strength of land forces and their manoeuvres could be detected for timely reporting with manoeuvrable close-look satellites; surface vessels could be identified as well as naval manoeuvres; the deployment of aircraft by type and number at various air bases could be observable within certain limits. Satellite monitoring can thus provide crucial and timely, though not exclusive, information in arriving at an over-all picture of a crisis situation.

2. Legal implications

17. The Group considered a number of aspects relating to the legal nature of an International Satellite Monitoring Agency, the question of obtaining data, mechanisms of operation and possible fields of application.

(a) Nature of the agency

18. The status of the agency was discussed and various alternatives were mentioned as having to be taken into consideration. The agency could be envisaged as a specialized agency of the United Nations, or attached to an existing United Nations body or to the proposed United Nations disarmament agency. Alternatively, the agency could be conceived not as a new entity but as part of the existing structure of the United Nations. Some advantages and disadvantages of these alternatives were considered, but it was felt that a more detailed analysis would be required. The Group nevertheless agreed that the legal nature of the agency should ensure independence in the execution of its functions, taking into account the decision-making procedures to be established. Questions relating to the charter of the agency were touched upon, but no conclusions were reached since these need further study.

- (b) Matters relating to the acquisition of data by an international satellite monitoring agency

19. It is suggested in the French proposal that, during the first phase, the agency would receive satellite data from existing systems. This would require arrangements between the agency and the suppliers of data. The Group further discussed the availability and dissemination of sensitive and non-sensitive data, and agreed that that required careful study. The Group noted that in the Committee on the Peaceful Uses of Outer Space, the problem of access to and dissemination of data received from remote-sensing techniques had been the subject of considerable discussion. It was felt that, in the future, when many nations were able to obtain data from their own satellites, the perception of sensitive and non-sensitive data might change. If the agency was called upon to monitor compliance with the provisions of certain treaties, the question of general dissemination by an international satellite monitoring agency would require further study. Suggestions were made for incorporation into appropriate regulations of the agency provisions concerning the safeguarding of the data received by the agency. That question would also require further consideration.

- (c) Role of an international satellite monitoring agency with regard to existing and future disarmament/arms-control agreements

20. Some bilateral arms-control and disarmament agreements contain clauses which, in effect, provide for verification by satellites. As far as multilateral agreements are concerned, the Group considered that further studies should be made on whether their verification clauses could be interpreted to provide for verification by satellites. In cases where that was not possible, protocols amending those agreements were mentioned as a solution. The role an international satellite monitoring agency might play in respect of future disarmament and arms-control treaties, for example, by formulating standard verification clauses, needs further study.

- (d) Possible contribution of an international satellite monitoring agency to the prevention and solution of international conflicts

21. The question of monitoring areas of conflict was discussed. It was mentioned that, if it was decided to use satellites to monitor activities in an area of conflict, the agency could make a considerable contribution to the cause of peace. In that connexion, it was observed that, in order to play a constructive role in crisis monitoring, the agency would have to be able to react promptly. This would depend on, inter alia, the position, number and manoeuvrability of satellites and also on the agency's decision-making procedures. The entire question and scope of satellite involvement in conflict monitoring remains to be studied in depth.

3. Financial implications

22. The Group was of the opinion that the financial implications of creating an international satellite monitoring agency require detailed study. Such a study

would have to take into account, inter alia, the tasks assigned to the agency, the technical choices preferred, organizational requirements and the extent of international co-operation. The study should give cost indications for the setting-up of an image-processing centre (stage 1), the establishment of ground stations (stage 2) and the launching of satellites (stage 3).

III. SUMMARY AND RECOMMENDATIONS

23. The Group fully recognized the valuable contribution which monitoring by satellites could make to the verification of certain parts or types of arms-control and disarmament agreements. This contribution from satellites to the verification process must not in general be seen as excluding other means of verification. The Group also appreciated the positive role that satellite monitoring could play in preventing or settling crises in various parts of the world and thus contributing to confidence-building among nations. The Group considered the gradual approach to the establishment of an international satellite monitoring agency technically feasible and saw in it a way to limit and control the financial commitments required from the international community. With respect to the legal nature of the agency, it appeared that action would have to be taken to ensure its independence, which would constitute an essential guarantee for the objectivity of its analyses.

24. The Group felt that many of the questions raised required further in-depth study and recommended that a comprehensive report on the subject should be completed in time for consideration at the second special session of the General Assembly devoted to disarmament. Since the Preparatory Committee for the special session will begin work in 1981, the comprehensive report, the possible outline of which appears in appendix I, should be completed by June 1981, in order that the Preparatory Committee may take it into consideration.

APPENDIX I

Subjects which should be studied in depth in a comprehensive report
on the establishment of an international satellite monitoring agency

The present appendix is not intended to constitute a final table of contents for the ultimate comprehensive report. This table is rather a draft list of questions to be dealt with in the future. It was drawn up by the Group of Experts in the light of the present stage of its deliberations.

A. Technical implications

- (a) Assessment of the "state of the art" and future perspectives of the capability of military and civilian satellites;
- (b) Centres for remote sensing;
- (c) Types of arms-control and disarmament agreements which can be verified and to what extent with the help of satellites;
- (d) Technical aspects of the crisis-management use of satellite monitoring;
- (e) Other technical considerations.

B. Legal implications

- (a) Charter of an international satellite monitoring agency;
- (b) Status of an international satellite monitoring agency;
- (c) Mechanisms for the operation of an international satellite monitoring agency;
- (d) Legal aspects relating to the acquisition of data by an international satellite monitoring agency;
- (e) Role of an international satellite monitoring agency with regard to existing and future disarmament and arms-control agreements;
- (f) Possible contribution of an international satellite monitoring agency to the prevention and solution of international conflicts;
- (g) Other legal aspects.

C. Financial implications

(a) Analysis of the satellite-monitoring costs of existing national and international organizations and bodies;

(b) Estimated costs relating to an international satellite monitoring agency in its three stages;

(c) Possible financing patterns as suggested by comparison with other international organizations and bodies.

APPENDIX II

List of experts

The following experts appointed by the Secretary-General participated in the work of the Group:

- Mr. Cesare ALBANESI, National Council of Research, Space Activity Service, Rome
- Mr. Hubert BORTZMEYER, Technical Adviser, National Space Research Centre,
Paris
- Mr. Sune DANIELSSON, Head of Section, Ministry for Foreign Affairs, Stockholm
- Mr. Mohammed GAMMAR, Surveyor in charge of Army geographic and hydrographic
affairs, Tunis
- Mr. Enrique GAVIRIA LIEVANO, Ambassador, Deputy Permanent Representative,
Colombian Mission to the Office of the United Nations and the specialized
agencies in Geneva
- Mr. Eugeniu MANDESCU, Inspector General, Secretary of the Romanian Commission
for Space Activities, Bucharest
- Mr. Carlos PASSALACQUA, First Secretary, Ministry of Foreign Affairs,
Buenos Aires
- Mr. Krishnamurthy SANTHANAM, Scientist "SE", Indian Space Research
Organization, Bangalore
- Mr. Mohamad SIDIK, Minister Counsellor, Permanent Mission of Indonesia to
the Office of the United Nations and the specialized agencies in Geneva
- Mr. Obrad VUCUROVIC, Engineer, Military Institute of the Yugoslav Army,
Belgrade
- Mr. Hans WINKLER, Assistant Legal Adviser, Federal Ministry for Foreign
Affairs, Vienna
