

Verification Aspects of PAROS

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I. What are the envisaged Measures for Outer Space Verification

Appropriate, feasible and effective verification could play an important role in ensuring faithful observance and implementation of a treaty. It could also help boost the confidence of each and every State Party to a treaty. On the other hand, whether, when and how to set up a verification mechanism for a certain legal instrument in the field of arms control and disarmament, must be commensurate with the specific nature and requirements of the instrument concerned.

Outer space verification measures envisaged by various sides up to now can be divided roughly into two categories:

1. Remote-sensing survey

- i. Outer space to outer space survey, which means using satellites to monitor the activities of outer space objects;
- ii. Outer space to the earth survey, which refers to, for example, using satellites to monitor the activities of space vehicles on the Earth and in the Earth's atmosphere; and
- iii. The Earth to outer space survey, which means, for example, using ground-based facilities to monitor the activities of outer space targets.

2. On-site inspections

- i. Inspections of relevant space research laboratories on the ground to find out whether or not research on weapons intended to be deployed in outer space or weapons targeting outer space objects intended to be deployed is going on; and
- ii. Verification of objects intended to be launched at space rockets launching sites to see whether they are weapons or whether there are weapons on board.

Specifically, the following ideas have been proposed --- of course this list is not exhaustive:

1. Establishing an international satellite monitoring agency to verify the observance of certain bilateral arms control agreements and to monitor crisis situations (proposed by France at SSOD I);
2. Seeking satisfactory verification measures for the prevention of an arms race in outer space and conducting direct international verifications, including on-site verifications under any possible circumstances (proposed by Sweden in 1985);
3. Setting up a PAXSAT (Pax Satellite) system to conduct verifications through space based remote-sensing survey (proposed by Canada in 1984);
4. Establishing an international space monitoring agency (proposed by the former Soviet Union at SSOD III);
5. Forming an international observer team to ensure the absence of deployment of weapons in outer space. The team will dispatch permanent observers to each space-launching site worldwide to ensure that no weapons will be deployed in outer space. To this end, prior to each launch, the following information should be submitted in due course to members of the observer team: the venue and timing of the launch, the type of the launching vehicle, and general information concerning launching objects (proposed by the Former Soviet Union in 1983); and
6. Verifying laboratories which conduct outer space research (proposed by the Former Soviet Union in 1986. In 1986, the United States tabled a similar proposal at the Conference on Disarmament).

II. Feasibility Analysis of the Verification Measures in an Outer Space Treaty

The inclusion of provisions on verification measures and the selection of their means in an arms control treaty is normally weighed against political acceptability, technical feasibility and financial affordability. As far as the envisaged new outer space treaty is concerned,

1. Politically, verification touches upon the issue of the protection of a nation's advanced technology and militarily sensitive information. This is especially true with the fact that, because of the relatively profound intrusiveness of on-site verifications, few States with outer space capability will allow personnel from other States to inspect their laboratories, or to stay permanently at their launching sites (unless between capability-comparable states). What is more, only a

small number of States have mastered the technology of satellite remote-sensing survey. It can hardly be expected that these countries will be willing to share their own "national technical means" with others. Nor will the latter be ready to accept such technical means not yet mastered by most countries as verification measure;

2. Technically, outer space verification measures would involve such cutting-edge technologies as survey, tracking and spotting. There are not yet adequate technological conditions at the moment to make an effective international verification regime possible;
3. Financial difficulties which may be brought about by the outer space verification regime cannot be overlooked. For instance, billions of USD will be needed to build such a verification system as the "PAXSAT".

For the above-mentioned reasons, many practical problems are to be solved before codifying meaningful verification provisions for the new outer space treaty.

III. Judging by the viewpoint of existing arms control treaties, verification provisions are not key elements of such a treaty.

Many elements will be brought into play when dealing with the verification issue. Currently, not all arms control treaties contain verification provisions. There are treaties that do not contain verification provisions under certain circumstances:

1. In theory, it would be possible to set up verification regimes for certain arms control and disarmament legal instruments already in existence. However, owing to technical, financial and other difficulties, such verification regimes have not been established in reality. Even so, the relevant legal instruments are still effective and binding, playing their positive roles. Belonging to this category are: 1967 Outer Space Treaty, 1979 Moon Agreement, CCW, Sea-Bed Treaty, ENMOD Convention, etc. BWC States Parties concluded the Convention before beginning to negotiate a verification protocol. As a matter of fact, among the 21 legal instruments listed by the United Nations as "multilateral arms regulation and disarmament agreements", a majority do not have a verification regime so far.
2. Because of the nature of certain treaty obligations, it is difficult to verify their implementation, even if finance and technology for verification are not a problem. Some weapons prohibited by treaties have the same technical origin as those non-prohibited.

Take blinding laser weapons (a prohibited weapon) as an example. Their functioning spectrum and power are within the same scope as laser disturbers (a non-prohibited weapon). The *Fourth Protocol to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to have Indiscriminate Effects* (CCW) forbids the use of laser weapons specifically designed, as their sole combat function or as one of their combat functions, to cause permanent or temporary blindness to the naked eye. However, optic disturbers are not forbidden by the above Protocol or any other treaty. That is why implementation of obligations of this nature is difficult to verify.

IV. Conclusion: Possible Alternative

The most important thing to do at present is to reach a consensus in the form of legal commitment and legal instrument on the prevention of the weaponization of and an arms race in outer space. In order to facilitate an early achievement of such consensus, it may be advisable to put the verification, as well as other potential contentious issues, aside for the time being. With the development of science and technology, the addition of a verification protocol to the proposed treaty may be considered in the future when conditions are ripe.

This question could also be viewed from another angle. The 1967 Outer Space Treaty, although without a verification mechanism, is both important and effective. However, the 1967 Treaty does have a serious loophole in the form of not covering weapons other than WMD. Now efforts are being made towards a new outer space treaty, with the purpose of plugging that loophole. If the new treaty could have a reliable and effective verification regime, that would be ideal. Nevertheless, following the suit of the 1967 Treaty, even without verification provisions, the envisaged new outer space treaty could still serve its purpose.

The verification issue with regard to a new outer space treaty is very complex, involving numerous factors and elements. It certainly deserves further careful exploration and consideration.