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**INTERMARS: USER-CONTROLLED INTERNATIONAL MANAGEMENT SYSTEM
FOR MISSIONS TO MARS**

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ABSTRACT

Existing international space law as well as the best interest of all nations are consistent with the establishment of a user - based international organization, herein called INTERMARS. INTERMARS would provide access to facilities and services at a Martian base which would be of high functional potential, quality, safety and reliability. These opportunities would be available on an open and non - discriminatory basis to all peaceful users and investors.

INTERMARS is a model organization concept tailored to provide cooperative international management of a Martian base for the benefit of its members, users and investors. Most importantly, INTERMARS would provide such management through a sharing of both sovereignty and opportunity rather than unilateral control by any one nation or set of competing nations.

Through an Assembly of Parties, a Board of Governors, a Board of Users and Investors and a Director General, INTERMARS would meet its primary goal as it would be in the self-interest of all members, users and investors to do so. The internal structure and philosophy of INTERMARS would provide not only for all participants to have representation in decisions affecting its activities, but also would insure effective and responsive management. Surely this is the precedent we wish to establish for mankind at the now not-so-distant shores of the new ocean of space.

INTRODUCTION

People throughout the world want space to be a frontier for human cooperation as well as a frontier of freedom and achievement. Unfortunately, the narrow political designs as well as the legitimate national interests of the nations of the world make broad cooperation in any area very difficult.

Such cooperation, however, is not impossible. The success of the Apollo-Soyuz mission in 1974 and various Soviet-French efforts shows that

joint efforts involving international adversaries are possible, at least if objectives are relatively limited and well-defined. The very successful Spacelab, developed by the European Space Agency and flown by the United States on the Space Shuttle demonstrates the potential for very close cooperation between free nations. Most importantly, in the INTELSAT and INMARSAT telecommunication organizations, we have examples where nations of all levels of economic development and all varieties of political persuasion have found it in their self-interest to cooperate in space-related projects.

If we are to see broadly based international cooperation in space, we must first see a commitment to the rule of a body of space law. Although not perfect, and certainly not complete, currently recognized and internationally sanctioned tenets of space law provide a workable base for future cooperation. The free world, however, must be very cautious about agreeing to any partial or total legal framework for space that either limits rational free enterprise activities or allows the one-nation, one-vote control of cooperative organizations. The United Nations developed "Moon Treaty" and "Law of the Sea Convention" are examples of the dangers of ill-conceived and badly negotiated new international law based on extreme applications of the otherwise acceptable notion that the Moon and the sea are the "common heritage of mankind". Fortunately, few nations have ratified these documents, nor should they be ratified without major amendment.

Currently, recognized principles in space law, as established by international treaties, are reasonably general and straightforward: (1) Space, including celestial bodies, is the province of mankind and should be developed for its benefit; (2) Space, including celestial bodies, should be free for access, exploration, scientific investigation and use by all countries; (3) Space, including celestial bodies, is not subject to national appropriation by claims of sovereignty, by means of use or occupation, or by any other means; (4) Space, including celestial bodies, shall be used exclusively for peaceful purposes; and (5) International law as formulated on Earth extends to space and celestial bodies.

These five principles, which have developed slowly over the last 25 years, are embodied in several multilateral treaties now in force, but most particularly in the Outer Space Treaty of 1967. They provide the

currently recognized international legal framework for initiating, planning and implementing international cooperation in space.

The principal new notion currently being explored as a possible basic tenet of space law is that which states that space and all celestial bodies are the "common heritage of mankind". Not only is this notion somewhat inconsistent with the ongoing search for extraterrestrial intelligence, but it is seriously flawed in its more extreme application as currently embodied in the proposed 1979 "Agreement Governing the Activities of States on the Moon and Other Celestial Bodies", or "Moon Treaty", and 1982 "Law of the Sea Convention". Under the "common heritage of mankind" notion, several new principles of space law, as they apply to the Moon, would be added to the list given above.

First, a celestial body, such as Mars, or any part of it would not be subject to appropriation by any entity, including private, corporate, national, or international interests. It would be owned or possessed by no one.

Second, all nations would share equally in the management of activities in space. National and limited international interests would be subordinate to so-called universal interests.

Third, any benefits from the exploitation of natural resources in space would be shared by all nations, not just those who developed the capability to exploit such resources.

The principal theoretical difficulty many see in the implementation of a "common heritage" regime is that unless there is international consensus on significant issues of administration, the resources of space would go unused indefinitely. Issues put to a vote would be divided on a one-nation, one-vote basis which would ultimately politicize decision-making. The practical difficulties in operating under comparable regimes of consensus and one-nation, one-vote principles are becoming increasingly evident in the politicization of international agencies such as UNESCO, the International Telecommunications Union and the World Intellectual Property Organization, not to mention the United Nations, itself. The stagnation of such agencies and their increasing antagonism toward the principles of the free flow of information and basic human rights is forcing nations back to bilateral and multilateral agreements in order to get anything done.

As it has been for 25 years and, as is international law in general, space law must continue to evolve subject to the realities of national and international interests and activities in space. It must adapt to changing political and technical conditions.

For example, the free world is already moving toward free enterprise commercialization of near-Earth orbit facilities. Does this violate any of the principles enumerated above? In the eyes of communist and many developing nations, it probably does. What about the hard resources of space, those in the Moon, planets and asteroids? Are they forever off-limits to free enterprise? probably not. Therefore, the question becomes "Under what national or international regime will such activities be conducted?"

Further, at least some permanent space stations will be the "sovereign" territory of single nations or limited groups of nations. Does this violate the letter or intent of the current principles? Obviously, it would seem to. Moreover, can we assume that territorial sovereignty will not be claimed for the first lunar or Martian bases if established by national entities as current trends would indicate they will be? Thus, it would seem that in space the concept of "functional" sovereignty is already clearly established. Functional sovereignty is considered the right of states or cooperating groups of states to exercise jurisdiction and control over assets and activities they have in space. Whether or not functional sovereignty will replace, or be replaced by, territorial sovereignty, only time and circumstances will tell.

Finally, it is clear to all, space is not being used exclusively for "peaceful" purposes in spite of treaty agreements to the contrary. It is probably unreasonable to assume that any new geographical frontier can be immune from either plans for aggression or the need to defend against aggression. There are no clear historical precedents to indicate this is possible, particularly when presence at that geographical frontier has significant implications for the balance of power between nations.

BACKGROUND

The next major crucible of legal experimentation and development in space law will probably come when men and nations return to the Moon to stay. The existing regimes of law for space discussed above create

significant legal constraints on nations interested in the establishment of permanent Martian bases. The obvious practical difficulties the world is experiencing with one-nation, one-vote international organizations provides significant pragmatic constraints on nations interested in international participation in a space base or settlement. Further, to realize the many recognized psychological, political and technical benefits of international participation in Martian base activities, the management regime of such a base must offer clear self-interest incentives to participation by major powers rather than the alternative of "going it alone" and "damn the legal torpedoes".

Fortunately, we have international experience with a successful model of a high-technology management system. This system conforms to the legal, operational and self-interest constraints that exists on international operations in space. This model system is INTELSAT, a user-based management organization for the operation of international telecommunications satellites.⁽¹⁾

The political and technical management of a global communication satellite system, as manifested by the INTELSAT organization, is a unique new entry into the international scene. It is an organization that developed because of a coincidence of new technology and obvious international need. To the everlasting credit of the United States, we perceived this coincidence and guided the gradual trial-and-error development of INTELSAT. To the everlasting credit of the INTELSAT organization, it has become an example of international cooperation that is not only remarkably successful, but also utilitarian and profitable.

The INTELSAT model has already spawned one successful imitator, INMARSAT, which manages international maritime communication satellites and includes the Soviet Union as a member. Modified versions of this model have been proposed for the management of international waterways⁽²⁾, space-based antenna farms and lunar bases⁽³⁾. Here we suggest consideration of another modified version of the INTELSAT management model which is appropriate to the international management of a Martian base.

We believe that "INTERMARS"⁽⁴⁾, as we have termed this suggested organization, would satisfy all the previously discussed constraints of space law as well as be consistent with the principles of free enterprise

which are held so dear in democracies of the world. Most importantly, INTERMARS would bring into the management of a Martian base those nations and other interests with the greatest motivations for insuring the successful implementation of that management.

The concept of INTERMARS is a concept of the space age and of the recognition that space resources are common resources of the spaceship Earth. INTERMARS does not require that territorial sovereignty be given up in space; it does not require that free-enterprise opportunities be abandoned in space; it merely requires that sovereignty and opportunity be shared.

BASIS FOR INTERMARS CONCEPT

Technological advancements have produced a trend towards realization of a "common heritage of mankind" in certain international resources. This trend is most apparent in negotiations regarding the resources of the seas and outer space. It indicates a general realization that nations have common interests in sharing benefits from the exploitation and environmentally sound use of these resources.

It must be recognized that Mars can become a common heritage resource for mankind. It also must be recognized that Mars will not be available to mankind without a workable management system and a peaceful management environment. An institutional arrangement should be possible which would vest operation and control of Martian bases in an organization composed of nations who will actively participate in creating such bases with association of those other entities who are solely users of the bases or investors in the technologies required to establish them. Such nations and entities would be united by a common bond of policy and purpose which would be focused on both the technical and financial success of the enterprise.

The advantages of sharing sovereignty and opportunity under this concept should be clear. First, the potentially disastrous discontent over which nation should exert control over Martian operations would be largely alleviated.

Second, the concept can provide institutionalized access and influence to all participants. Nations, users and investors with any degree of participation in INTERMARS would have to be consulted,

eliminating the possibility that small or temporarily small participants could be frozen out entirely.

Third, the operational objectives of a base or settlement would be best met by this concept. The most important of these objectives are (1) assuring access by all members to the base and its services; (2) assuring access to proprietary technologies and available material resources in proportion to investment; (3) assuring access to Martian scientific resources; (4) maintaining reasonable and uniform rate structures bearing a realistic relationship to the value derived from the use of the base (and of spacecraft moving to and from it) while also considering operating expenses and return on investment; (5) assuring administrative stability over long periods of time; (6) assuring effective maintenance and operation of facilities and services; and, (7) assuring continued and environmentally sound expansion, improvement and development of spacecraft, facilities, and services.

Finally, creation of an international organization of all nations, users and investors who wish to actively participate in the excitement of space pioneering cannot help but improve the friendship and unity of purpose of nations and peoples on Earth.

MANAGEMENT STRUCTURE

The conceptual advantages of a user-based international organization will only be realized if the actual institutional structure is designed to provide an equitable system for the various interests to exert influence and control, as well as provide for efficient and proper management of the base.

There are two distinct mechanisms for nations, users and investors to be involved in INTERMARS. The first mechanism relates to the creation and operation of a Martian base. It draws to it those nations that contribute directly and substantively to the activities required to establish the base and stabilize its initial operation. The second mechanism relates to the use and the terms and conditions for use of the base, its accessible resources and the proprietary technologies required to establish it. This second mechanism draws to it those nations, users and investors who contract with or invest in INTERMARS in order to benefit from its activities.

The main functioning bodies within INTERMARS would be the Assembly of Parties, the Board of Governors, the Board of Users and Investors and the Director General's office. The member nations of the Assembly of Parties would collectively exert policy authority over the major contributing nations comprising the Board of Governors which, in turn, would exert operational authority over the Director General, the operating entity of INTERMARS. The Board of Users and Investors, working within the policy framework set down by the Assembly of Parties, would develop recommendations on operational issues affecting their interests. These recommendations would be presented to the Board of Governors through the Board of Users and Investors formal representatives on that Board.⁽⁵⁾

PROVISION FOR SELF-DETERMINATION

Inherent in the concept of establishing a permanent Martian base is the high probability that such a base would ultimately become a human settlement of permanent residents. If our history on Earth is any indication, such permanent residents will eventually desire a controlling voice in the governing of their activities. We should take this possibility into account in the initial structure of INTERMARS so as to avoid the conflicts that plagued colonial establishments in the past.

The best way to do this is to create from the beginning of INTERMARS a clear mechanism by which the settlers can be represented in its organizational entities and by which the settlers can have majority control of INTERMARS at an appropriate level of population. Thus, the INTERMARS charter should contain concepts such as the following: (1) The provision for a seat for INTERMARS settlers on the Assembly of Parties, the Board of Governors and the Judicial Tribunal; (2) The provision for the systematic accumulation of voting shares for INTERMARS settlers based on the number of settlers who qualify as permanent residents; and (3) Clear recognition that the success of INTERMARS will guarantee that its settlers will ultimately gain voting control of the organization if they then desire such control. The net result of these concepts would be the transition of INTERMARS from an international exploration, management and investment organization to a true Martian government.

RIGHTS AND OBLIGATIONS OF MEMBERS

The INTERMARS charter must spell out the rights and obligations of its member nations, users and investors. Although this would be the

subject of much negotiation, a few points appear to be critical to the success of the enterprise.

First, the member nations must agree to refrain from the establishment, or cooperation in the establishment, of any other facilities and services related to Martian bases outside those of INTERMARS unless it is done jointly with INTERMARS.

Second, the member nations must agree that INTERMARS facilities and services, including those national facilities and services committed to INTERMARS by contract, shall be neutral so that in time of hostilities or threatened hostilities, INTERMARS facilities, services and personnel would remain secure to peaceful use by all nations without discrimination. Thus, INTERMARS should not be a target of hostile forces in any armed conflict.

IMPLEMENTATION

It is never simple to initiate and then implement a new international concept or organization. INTERMARS will be no exception. However, the establishment of INTERMARS is clearly possible so long as the commitment of the United States to the establishment of a Martian base is unequivocal and there is a sincere willingness to search for a fair means of international participation in such an endeavor. On the other hand, if the United States is, or appears to be, hesitant and uncommitted to either the base or international participation, then it is highly probable that the Soviet Union and possibly other nations or groups of nations will "go it alone". If this should happen, a great opportunity for increased cooperation and trust among otherwise competing nations will be lost.

With commitment to a Martian base by the United States, the next logical step would be the convening of an international conference to consider a draft of an INTERMARS charter. This draft charter should be the product of extensive bilateral and multilateral discussion between nations critical to the ultimate political viability of the organization. The United States clearly would have to take the lead in this early drafting period, but there is no reason why the final drafting conference should not be by joint invitation of all interested nations. All nations should be invited to send official delegates or observers as they are so

inclined. Potential user or investor entities should be invited as observers or allowed to participate as members of official delegations.

An obvious question is, "How can the Soviet Union, the Soviet Bloc nations and the Developing Nations be brought into the development and implementation of INTERMARS?" The answer lies in making participation "an offer they cannot refuse" as has been largely the case with INTELSAT and INMARSAT. Such an offer is inherent in, first, an unequivocal commitment by the United States, Europe and Japan; second, a clear willingness to share sovereignty, opportunity and technology; and third, a clear articulation of direct human, scientific and economic benefits to all participating nations. Once a reality and once it is clear it will be successful, INTERMARS will attract many of those nations that may at first be reluctant to participate. Although conceived as an international self-regulating monopoly, INTERMARS should always be open to new members and investors if it is to achieve its broad humanistic goals as well as its technical and economic purposes.

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- (3) Joyner, C. and Schmitt, H.H., 1984, "Lunar Bases and Extraterrestrial Law: General Legal Principles and a Particular Regime Proposal", Proceedings of "Lunar Bases and Space Activities of the 21st Century," LPI, (in press).
- (4) We acknowledge, gratefully the early and critical contributions of Dr. Delbert Smith to the extension of INTELSAT concepts to other applications.
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