

CONFIDENCE BUILDING MEASURES AND THE FOURTH MEDIUM

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ABSTRACT

Historically, land, sea, and air have developed into mediums of habitation, commerce, and conflict. Space has emerged as the Fourth Medium. With the recent end of the Cold War, the incidences of regional conflict, and the spread of technologies which can be used to expand the lethality of conflict, have increased. Ultimately, regional stability and freedom from conflict depend upon the trust established between potential adversaries. Confidence building measures help to foster that trust. In the past, nations have not always desired to implement those measures, even when the capabilities were available. Current and future space systems allow confidence building measures which would have been difficult to implement in times past. While the growth of the Fourth Medium offers new opportunities to enhance international security, it also raises political and policy issues. These issues must be identified and addressed if the Fourth Medium is to be used successfully to enhance international security.

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INTRODUCTION

A Bond of Trust. Recently, I talked with a friend who is in charge of a charitable ministry to Russian orphanages.¹ He travels to Russia frequently and especially enjoys conversing with the elderly Russians who were alive during World War II and the period of recovery from that war. One of the things that stood out in those conversations was the elderly Russians' opinions of the United States and Americans. Stalin and the Communist propaganda "painted" the Americans as evil and the enemy. Yet, the elderly Russians told my friend they did not believe the official view of Americans, because they remembered the aid that the Americans had sent during the battles along the Eastern Front and the German occupation of Russia. These elderly Russians had experienced, first hand, the caring nature of the Americans. The American deeds and their personal experience outweighed Communist propaganda to the contrary. Acts of kindness had established a bond of trust that some 50 years of invectives to the contrary could not erase.

World Environment. The world in 1998 is currently experiencing its share of conflicts where such trust is frequently lacking and, in many cases, not even desired. Tensions between India and Pakistan, Serbs and Albanians, North Korea and South Korea, the United States and Iraq... within Bosnia, Afghanistan, Sri Lanka, Republic of Congo, Cambodia... are just a few of the places where violence has taken place this year or the threat of conflict is present. Add to that many other areas of historical enmity where tensions are present and somewhat more subdued, but could easily erupt into conflict. Our world continues to need the establishment and building of trust among factions who hold opposing views. When none of the factions desire peace, the challenge is greatest to those other nations and organizations trying to preserve regional stability. When one of the factions desires peace, the challenges remain high, but opportunities exist for initiatives which can lead to a change in the opposing factions intentions and actions. The greatest potential for trust and confidence building comes when all factions have agreed to seek peaceful solutions to a conflict or heightened tensions.

Framework. There is a continuing challenge to establish confidence and trust among these various factions and to enact measures to build that confidence and trust, i.e., confidence building measures. Webster's New World Dictionary defines the following: "**Confidence:** firm belief, trust, reliance; the fact of being or feeling certain, assurance"... "**Building (Build):** to order, plan, or direct the construction of"... "**Measures:** a procedure, a course of action."² Taken as a whole, to enact confidence building measures, there must be some specific actions that initiate, and result in, a change in one's emotions and beliefs.

This paper will seek to illustrate how systems in the fourth operational medium (air, land, and sea constitute the first three), space, can contribute to, and enhance, those confidence building measures and identify the issues associated with using space systems to support confidence building measures.

Notes of Caution. A few notes of caution are in order. First, confidence building measures are not a panacea to the prevention and resolution of conflict. Confidence building measures (CBMs) are but one tool of many to address conflict. "Clearly, CBMs are not intended to deal with the root causes of conflict, but advocates argue that these measures are the first step in turning hostile relationships into more accommodating ones."³ Second, and perhaps more importantly, confidence building measures will not succeed if the opposing factions do not wish to prevent or resolve their conflict. "A gardening book will not make plants grow in the face of a drought..."⁴ No matter how much technology is applied, no matter what medium is used (e.g., space), if there does not exist a desire and will to prevent or resolve conflict, there is no use for confidence building measures. The problem is not first and foremost a technical one; it is ultimately a political and policy problem. Any technical solutions must be considered in light of the larger political and policy frame work. To do so, one must consider some of the aspects of establishing trust. Trust is not established instantaneously in any relationship, be it between persons or between nation states. Unfortunately the reverse is not true; the dissolution of trust usually happens very quickly, perhaps based on only one incident.

TRUST

Past. For the purpose of this paper, let us assume that there is at least some measure of support for the prevention or resolution of conflict among/between the opposing factions. The desire to establish trust is fundamental to confidence building measures. To establish and build some measure of trust, there are three timeframes: past, present, and future. In the beginning of such a trust-building process, there is no past. It is essential to begin activities which will construct a framework of trust, a positive past. Opposing factions must examine each activity in light of how it will

be viewed weeks and months, even years, hence. In looking back, opposing factions might ask such things as: has there been an atmosphere free from destructive actions? Have there been any verifiable concessions from the opposition? Have there been any unexpected actions, especially ambiguous ones requiring some kind of response from the opposing faction? Have the opposing faction's deeds matched their verbal and/or written commitments? Have there been any cooperative activities which create interdependence? Has there been any successful, formal confidence building measures program?

LOW TRUST

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Destructive Actions
Demands for Concessions
Unexpected, Ambiguous Actions

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⇒⇒⇒⇒⇒⇒

⇒⇒⇒⇒⇒⇒

Actions Inconsistent with
Commitments
No Interdependent Activities
No Formal Confidence Building
Measures Program

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HIGH TRUST

Constructive Actions
Concessions Unilaterally Given
Pre-notification of Actions,
Purposes Clearly Established
Actions Consistent with
Commitments
Many Interdependent Activities
Successful, Formal Confidence
Building Measures Program

Past-Level of Trust
Figure 1

Present. One cannot change negative circumstances which have happened in the past, but actions taken in the present can become the foundation for a more meaningful and appropriate past. The "High Trust" column in Figure 1 offers some examples of activities which could be taken to enhance trust, actions which could form the basis of a more acceptable and constructive past.

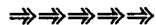
If one assumes that there have been some history of activities to build trust, then it is

essential to build upon those activities. For the present, the opposing factions must consider such things as: are there negotiations on-going or planned to prevent or resolve the conflict? Is the opposing faction currently pursuing an course of action designed to obtain an advantage in the conflict/pre-conflict stages or negotiations? Are any actions not explainable or with questionable explanation? Are actions, which could be misinterpreted as threatening, taking place exactly as announced by the opposing faction(s)? Are

there any cooperative activities which create interdependence? Are there any formal confidence building measures programs

currently underway among/between the opposing factions?

LOW TRUST



HIGH TRUST

- No Negotiations
- Aggressive Measures Underway
- Unexpected, Ambiguous Actions
- Actions Inconsistent with Announced Plans
- No Interdependent Activities
- No Formal Confidence Building Measures Program

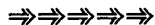
- On-going Negotiations
- No Activity
- All Actions Clearly Understood
- Actions Consistent with Announced Plans
- Many Interdependent Activities
- Formal Confidence Building Measures Program Underway

Present-Level of Trust
Figure 2

Future. The building of trust is a slow process. Actions in the past and present are critical, but not sufficient. If an opposing faction were to believe there is no support for continuing to build this trust, peaceful prevention and/or resolution of the conflict is unlikely. For the future aspect of trust building, the focus will be on indicators and intentions. For example, are there any indications of unannounced preparations for

actions which would be harmful? Is there a confluence of planned, but announced, actions which could easily escalate into a clear threat to one of the factions? Are the announced intentions of opposing factions consistent with the prevention and/or resolution of conflict? Are there any formal confidence building measures programs planned for the future?

LOW TRUST



HIGH TRUST

- Indications of Preparation for Hostile Actions
- Confluence of Announced Actions Which Could Threaten
- Announced Intentions Inconsistent with Prevention/Resolution of Conflict
- No Formal Confidence Building Measures Program Planned

- No Indications of Preparations for Hostile Actions
- No Confluence of Announced Actions
- Announced Intentions Consistent with Prevention/Resolution of Conflict
- Formal Confidence Building Measures Program Planned

Future-Level of Trust
Figure 3

ATTRIBUTES OF SPACE

Once the opposing factions have decided, in some measure, that prevention and/or resolution of conflict is in their best interest, the Fourth Medium, space, provides a means to help accomplish this. There are several key attributes of space systems which can help establish and build confidence and trust. First, the “**vantage point**” of space systems gives them a breadth of access and view unlike anything in the other three mediums. Second, they are, in essence, “**out of harm’s way**.” Space systems are not subject to the same threats that an airplane, ship, or land vehicle would or could encounter. Third, there is an “**international nature**” of space that makes the use of such systems more acceptable by opposing factions. For example, many of the world’s communications satellites are owned and operated by multi-national commercial organizations with no direct political ties to any nation state. Fourth, their relative or actual “**omnipresence**” allows them to be used continually or very frequently. The relative omnipresence is the result of the number of satellites and their frequency of access to any given point on the earth. These qualities increase the value of space systems to certain categories of confidence building measures.

CONFIDENCE BUILDING MEASURES

Categories. Typically, confidence building measures fall into categories such as: limitations or reductions in security forces and weapon systems, arms control and/or weapons agreements, establishment and monitoring of zones free from hostile activity to include border agreements, limits on activities in close proximity to such zones, exchange of information regarding planned activities, pre-notification of near-

term activities which could be perceived as hostile, direct observation of activities and capabilities, exchange of information on mutual threats and (natural and man-made), standardized methods to report information on expenditures and resources, exchange of information regarding capabilities and policies, exchange of information on organizations and organizational points of contact, joint activities and projects to include research, joint education and training, joint use of facilities, exchange of personnel (not limited to security personnel), designated sites/facilities for activities and resources, on-site inspection, standardized communications among military and security forces, standardized operating rules, and regular forums to address compliance with and issues arising from these confidence building measures.⁵

How can space systems contribute to these various categories of confidence building measures? What are the policy implications of use of space systems in this role? In some cases, space systems have no direct value; while in others, they may be one of the essential elements.

Limitations or Reductions in Security Forces and Weapon Systems. Space systems can be used as a force multiplier, allowing reductions in conventional military forces. Satellite communications can improve command and control, allowing reduction in forces. Precise satellite-based navigation can improve weapons delivery, reducing the number of weapons and/or sorties to destroy a target. Information from weather satellites can directly effect the timing and magnitude of military operations enabling greater efficiencies and thus less military forces. Data from commercial remote sensing spacecraft can also provide key surveillance information, also providing for more

efficient use of forces. While space systems certainly can assist in the reduction in forces, they can only do so if the factions have sophisticated enough defense forces to make use of the space systems and if they have such space systems or access to data from these systems. If one were to examine which countries or factions possess such military space systems or space systems used for military purposes, the answer today would be "few". Note: While some countries do possess intelligence satellites or access to information from those satellites, this paper will only address the use of unclassified space systems. Nonetheless, most nations and organizations do have access to commercial satellite communications, space-based navigation, space-based weather, and commercial remote sensing. These systems have clear security applications. The dual-use nature of many commercial satellites and the utility of one country's satellites for another's (perhaps even an adversary's) benefit presents new political and policy challenges, even though it may contribute to confidence building measures. Should the use of such satellites be promoted to reduce conventional military forces? Should such satellites be used to increase the lethality of reduced forces and systems?

Arms Control and Weapons Agreements.

These agreements can be encouraged by the use of space systems to monitor compliance. While much of the current monitoring of agreements by space systems involves classified, national technical means of verification, the current and promised capabilities of civil and commercial remote sensing satellites provide countries and organizations who cannot afford a dedicated satellite to independently verify agreements. In a 1996 Internet report, scientists from Sandia National Laboratories describe how

they were able to use commercial imagery to derive information about India's nuclear test program. Nevertheless, they stated that, "The temporal and spatial limitations of the current commercial imaging satellites illustrate the need for more responsive, higher resolution imaging systems. Fortunately, better satellites are presently under construction... The companies that will sell these images plan to deliver the digital products within 72 hours of acquisition. If these satellites perform as specified, the CTBT [Comprehensive Test Ban Treaty] verification regime will be enhanced significantly."⁶ It is expected that these commercial capabilities will not only improve in resolution and timeliness, but also in numbers of satellites available for use. Once again, the international security community is faced with the dilemma of use of these commercial systems to enhance verification, but at the same time realizing these systems could also provide an adversary with key intelligence during preparations for and engagement in conflict. In addition, is the information gained from these remote sensing satellites equally available to all interested parties?

Zones Free From Hostile Activity.

Establishment of such zones, and limits on activities in close proximity to such zones, are traditional measures used to lessen the likelihood of armed conflict. Modern examples include the military demarcation line and the associated demilitarized zone between North and South Korea and the Sinai Disengagement Agreements (Sinai I and II) between Israel and Egypt. Here space systems can be of assistance by using space-based navigation systems to very precisely locate and mark lines of demarcation, satellite communications to transmit and relay data from unattended ground sensors, and in some cases

commercial remote sensing satellites to provide independent verification of terrestrial-based observations. In particularly rugged terrain, commercial satellite imagery may be helpful in the optimal placement of unattended ground sensors.⁷ Satellite-based navigation systems can be used to cooperatively track and monitor the movement of vehicles. In cases such as these, the issues of sovereignty, limits on collection, availability of information to all parties without tampering, and data interpretation capabilities must be addressed.

Exchange of Information on Mutual Threats.

The exchange of information is certainly aided by the use of space systems. Natural threats such as severe weather (e.g., typhoons, hurricanes, monsoons, flooding) can be predicted using space-based weather satellites. Dangers from volcanic ash can also be predicted based upon space-based weather observations. Commercial and civil imagery from space can aid natural disaster recovery. Satellite communications can also be essential in disaster recovery when existing communications infrastructure is overwhelmed or destroyed. For man-made threats, space-based weather observations can help to predict when and where hostile actions may occur, if the actions are weather dependent. Satellite communication "hot lines" can be the mechanism to transmit tactical warning of hostile activities. Space-based navigation systems can aid search and rescue operations in all threat environments. Commercial imagery can detect precursors (e.g., troop build-ups) to hostile activities. Information from missile warning satellites on ballistic missile attacks or tests could be shared, provided appropriate sharing agreements are in place. Information from these space sources can be used in many positive aspects, even if provided by a

country other than the opposing factions. However, this information could also be used by one or both of the factions to assist in the initiation of hostile activities. Provision of incorrect or untimely data could produce negative consequences. Also the release of information from and use of military satellites would require the appropriate approval of the owner country. The provision of some data could also reveal sensitive information about capabilities.

Joint Activities and Joint Use of Facilities.

Such joint activities could easily involve space systems as an integral part of the confidence building program. Joint military, civil, and commercial space programs are a part of many national and corporate plans. The international space station, international space exploration, multi-national communications and remote sensing satellites are some of the key programs where confidence and interdependence are built. Joint military and civilian exercises (e.g., disaster recovery, environmental monitoring) are ideal candidates for space systems involvement. Space education is becoming a part of many curricula, and cooperative space education is occurring in the civilian and military world. Joint use of space facilities is also an associated growing trend, based upon the cooperative activities listed above. The expense of space activities makes cooperation and collaboration essential. The sharing of technology and potentially sensitive information in such activities does present challenges for those who wish to protect certain technological advantages, as well as prevent others from using newly found knowledge for hostile purposes.

Standardized Communications. Here, standardized satellite communications among military and other national security

forces can be invaluable in establishing specialized links between hostile or potentially hostile countries or factions. Such communications are essential to prevent misunderstandings and misinterpretations of planned as well as unexpected events. Hot lines between Moscow and Washington D.C. are examples of instant communications channels used to lessen the likelihood of conflict. Such communications are not limited to heads of state. These communications are just as appropriate for lower level military and security echelons in on-going border disputes and established military lines of demarcation. One challenge is to establish “rules of the road” for their use and methods to escalate the dialogue if communication at lower levels does not achieve the desired result. A second challenge is to ensure the availability and security of the communications. A final thought in this area, if a third party is providing this communications service, what is the responsibility to guarantee the availability of this service?

Other Contributions. The Fourth Medium can or does play a direct role in many aspects of confidence building measures. In other cases, space systems are not the primary “players” in confidence building activities such as: the exchange of information regarding planned activities; pre-notification of near-term activities which could be perceived as hostile; standardized methods to report information on expenditures and resources; exchange of information regarding capabilities and policies; exchange of information on organizations and organizational points of contact; on-site inspections; direct observation of activities and capabilities; designation of sites/facilities for activities and resources; exchange of personnel (not

limited to just security personnel); standardized operating rules; and the establishment of regular forums to address compliance with, and issues arising from, these confidence building measures.

Nonetheless, space systems could have a potential role in each of these confidence building measures. Satellite communications could be the means by which the various types of information are exchanged. Space system capabilities and space activities (e.g., launches) could well be part of the information exchanged. Space policies, space organizations, and space points of contact will likely be items of interest in exchanges of that type of information. Space systems can be used in a variety of ways to support on-site inspections and direct observations of activities and capabilities by an observer. For example, commercial imaging systems could provide supplemental information that an observer or inspector could not see, i.e., beyond their range or spectral capability. Such imaging systems can also provide before and after views to help put the observations or inspections in perspective. Space sites could be part of the list of sites declared for specific purposes, e.g., launch sites. Space systems’ personnel could be part of personnel exchanges. Operating rules for space systems could be part standardized operational procedures, e.g., practices for orbital debris minimization, avoidance of debris, and laser illumination for ranging purposes. Finally, use of space systems could be a part of forums to discuss confidence building measures. In all these cases, space systems are part of the underlying infrastructure for confidence building measures.

CBMs AND FOURTH MEDIUM ISSUES

The Fourth Medium can unequivocally contribute to many types of confidence building measures. If one returns to the attributes of trust building in the three figures earlier in the paper and compares those to the contributions made to confidence building measures, one can see how space systems can enhance those attributes of high trust. This occurs primarily in the areas of indications and warning, reduction or elimination of ambiguity, creation of interdependence, independent verification, and real time conflict resolution.

Still these positive benefits raise policy and political questions that remain to be answered: How can one use these systems for positive contributions, yet prevent them from being used to promote hostilities? How can one allow access to these technologies without revealing national security information? How can one use these systems in a fair and equitable manner between opposing factions? What is the responsibility to make these systems and their information available to others on a continuing basis? What is the responsibility and liability of a third party provider if wrong or untimely information or services are provided? What legal regimes are necessary to control and allow access to these systems? Finally, do increased contributions of and dependence on space systems contribute to development of means to counter those systems?

PRINCIPLES TO ADDRESS ISSUES

Aspirin and Cancer. Aspirin is a wonderful medicine, but it is not a cure for every illness. We too must realize that confidence building measures are not a panacea nor are

space systems the only means to building trust. CBMs are useful; but if the desire for peace and willingness to sacrifice do not exist, then all the confidence building measures in the world will be to no avail. CBMs and space systems are but two tools of many among nations to avoid conflict. We must not ascribe to them more than they can do.

The Long Haul. Trust does not happen overnight. It takes time to build and is easily destroyed. Thus confidence building measures must be thought out and examined for their long term and short term implications. It is far better to enact and continue some measures than to only talk about what must be done. Even a small bastion of trust is better than the unfulfilled promise of much larger measures to come.

Sign Language is Important. Confidence building measures and use of space systems to support them must be understood in light of the cultures to which they are applied. Just as different gestures can mean different things in different cultures, so can the application of CBMs and space systems. Different cultures may well view aspects of confidence building measures differently. They may also view the use of space systems to support them differently. These different views can doom the measures if not taken into account in their formulation and implementation.

Toothpaste and Toothpaste Tubes. Have you ever come upon a young child who has squeezed all the toothpaste out of a tube and is trying to put it back in before he or she is caught? Well, the space "toothpaste" is "out of the tube" and cannot be put back. Significant space technology and capabilities are available worldwide and will be increasingly so. There is no turning back.

Nevertheless, there should be capabilities to deny an adversary use of those space systems for hostile purposes. This does not mean that destruction is the only option. In fact, the most harmful space system may also be one owned and used by a nation who is at risk from the adversary. In addition, others (friends, allies, and neutrals) may also be vitally dependent upon the system used by the adversary. Creative, non-destructive means must be developed to control the use of space systems for hostile purposes. In some cases, however, the value of the space system's information to the owner and others may outweigh the benefit of denying an adversary use of the system. Here is much room for creative thinking and rigorous debate.

Skateboarding at Age 52. If one were to try to skateboard for the first time at age 52, he or she must balance the risk versus the benefit of the pleasures from doing it. Similarly, each nation and organization possessing what they believe to be a competitive technological advantage must balance that with the gains which may be realized by cooperative ventures and technology sharing. There is no easy answer to this decision. There are many factors which are a part of this decision to include cost, risk of adverse circumstances if not undertaken, greater political factors, legal restrictions if any, stability of public support, timeliness of accomplishment, alternate methods to achieve the activity or program, and benefits received from participating organizations or nations. This decision is not likely to be made by one organization within a government, but more likely an interagency decision among competing interests.

You Can Count On It. Or can you? The challenges of assuring data and service

availability, and on an equitable basis, is more a technical one than political. Nevertheless, there are political implications to convincing opposing factions of this. Here culture must be taken into account, and any such provision of this kind of support must be conceived with the objectives of assurance and equity in mind. A solution to this may be more expensive than one where these objectives are overlooked or not given an appropriate priority. Availability of data must be a key consideration in planning for the use of space systems in CBMs.

Truth or Consequences. A provider of information and services must consider the consequences of false data and data reported late. System design can minimize this possibility, but the policy makers must play the "what if" game. Right now there are no direct legal liabilities; but the consequences could be an eruption of conflict, a conflict that could also spread to other countries. Advertising the risks to the recipient of data and services is necessary, but not sufficient. Politically, the provider must seek not to be the "single point of failure" in the decision making chain of another.

Talk is Not Cheap. There should be dialogue among spacefaring nation states about the control of and access to space systems which provide militarily significant data. Pretending the problem doesn't exist or that it is far in the future is to assume the "ostrich posture" while the problem grows or occurs. Solutions are not likely to be easy or cheap. Now is the time to initiate this dialogue.

Militarization of Space? one can only speculate if the development and growing dependence upon space systems will lead to further militarization of space, particularly in the development of counterspace

capabilities. If we look at the other three operational mediums, it is reasonable to assume this will happen. Can it be avoided forever? I do not think so. Do we have ships on the seas to protect right of passage and international commerce? Yes. Do we have land-based systems to protect national boundaries? Yes. Do we have airplanes to protect our airspace? Yes. Are we using these to help prevent conflict everyday throughout the world? Yes. We have created various agreements and regimes to prevent and resolve conflict with these military systems. The key is to build the positive, cooperative programs that by their very nature contribute to stability and peace.

CONCLUSION

As mentioned above, it is time for serious dialogue on how to enhance the use of space capabilities while preventing their use for activities adverse to regional and world stability. Unfortunately, dialogues in the past have at times been more polemics against certain practices and capabilities rather than offering constructive ideas for advancement. We need a new basis for dialogue...a basis that recognizes the reality of what is happening in space, what is likely to happen, and the value of this growing Fourth Medium to all. It must begin with the good that has been and can be accomplished, not a vision of the destruction of everything in space. It must focus on all nations working together, cooperatively, for their mutual benefit. This positive focus can yield significant results and build confidence and trust throughout the world.

¹ Steiner, George. Conversation on August 31, 1998, Executive Director of Children's Hope Chest, Colorado Springs, Colorado.

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⁴ Fisher, Roger, International Conflict for Beginners, Harper and Row, New York and London, 1969

⁵ These generic categories come from a review of Table IV, Confidence and Security Building Measures, Stages in East West Confidence Building, The Stimson Center, Internet Posting, <http://www.stimson.org/cbm/table3.htm>, August 1998; April 7, 1998 Fact Sheet on Organization of American States Conference on Confidence and Security Building Measures, February 25-27, 1998, United States Arms Control Disarmament Agency, Internet Posting, <http://www.acda.gov/factshee/secbldg/oas.htm>, August 1998; Agreement Between the Government of the Republic of India and the Government of the People's Republic of China on Confidence Building Measures in the Military Field Along the Line of Actual Control in the India-China Border Areas, 29 November 1996 (New Delhi), The Stimson Center Internet Posting,

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⁷ Duggan, Ruth, Kim, Myung-Jin, Moon, Kwang-Keun, Nam, Man-Kwon and Vannoni, Michael, Section 4.5, A Conceptual Development for the Cooperative Monitoring of Limited-Force Deployment Zones Cooperative Monitoring Center, Sandia National Laboratories and Arms Control Research Center, Korea Institute for Defense Analyses, October 1997, Internet Posting, <http://www.cmc.sandia.gov/issues/papers/970583/index.html>, August 1998.