

Security Implications of Japan's Information Gathering Satellite (IGS) System

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Countries which previously limited their space activity to civilian purposes have increasingly come to employ dual-use technology as a first step into the world of military space. Japan's Information Gathering Satellite (IGS) system, intended to support disaster relief situations, and provide information for diplomatic and defense policy decision-making, is exemplary of this trend. Not coincidentally, the program was approved shortly after the 31 August 1998 North Korean launch of a Taepo Dong missile that sailed over Japan. While the program had been unsuccessfully proposed previously, Japanese politicians, surprised by the launch, became amenable to the point of perhaps rushing their decision. This article suggests that what capabilities these satellites render appear to Japanese policy makers to be a secondary concern to the initiation of an autonomous intelligence capability.

On 31 August 1998 North Korea launched a *Taepo Dong* missile that arched over Japan, eliciting tremendous public and political angst. That event was the direct impetus for Japan adopting a program to develop four reconnaissance satellites, an event that signified a shift away from a self-imposed ban on building 'spy' satellites. Subsequently, a Japanese rocket blasted off from its Tanegashima island launch pad the morning of 28 March 2003 carrying the first two of those reconnaissance satellites, called Optical-1 and Radar-1. The North Korean response to the launch announcement was a threat of 'disastrous consequences', clearly indicating the import they place on Japan acquiring this new capability.

Officially described as multi-purpose information gathering satellites (IGS), they are designed to provide information for diplomatic and defense policy decision-making, as well as information to support crisis management and disaster relief situations. What capabilities the satellites will eventually provide that are not currently available is, however, questionable. This article

examines the origins of the program, its direct and indirect, actual and potential benefits, and what the decision may say about Japanese decision-making generally, and on security issues specifically. Analysis of the IGS program is insightful from multiple perspectives. It provides an interesting example of Japanese decision-making in response to issues eliciting strong public opinion. It also exemplifies an imperfect programmatic response to an intelligence dilemma not necessarily unique to Japan.

THE JAPANESE DECISION-MAKING CONTEXT

Styles of decision-making are, to at least a certain extent, culturally based.¹ Whether analyzing an individual, an organization, or a country, cultural propensities toward factors such as collegiality versus competitive spirit, trust, sense of outcome obligation, risk-aversion, and others all influence decision-making. They are often studied in the context of issues such as how differences between these propensities impact the potential for success in cooperative ventures.² Much of what analysts have found revolves around the premise that culture is a communications system. Culture is also multi-dimensional, stemming from and extending through such individual aspects as nationality and profession.³ How communications are subsequently carried out within cultural parameters determines, partially or wholly, how decisions will be made.

Japanese culture, especially since the Meiji Restoration in 1868, focuses on groups, group advancement, and ultimately national advancement.⁴ Politically, economically and in business, that cultural propensity comes together under the rubric of consensus decision-making. The bottom line is that avoiding mistakes is the predominant factor in the normal Japanese decision-making process, as that allows individuals to save face within the group. But this time-consuming, risk-averse, and ambiguous process is neither conducive to working cooperatively, nor particularly useful when rapid decisions are required. Consequently, when a rapid decision is required, there is a tendency for it to be a knee-jerk response. This dichotomy of options is increasingly recognized as problematic, even within Japan.

Within their traditional decision-making process, the Japanese term used is *nemawashi*, which translates as 'root binding'. It refers to an agricultural premise that the roots of a tree need careful attention and binding before a tree is moved. Applied to policy-making, it refers to the basis on which decisions are to be reached: based on extensive information widely distributed and discussed, and the subsequent understanding by all involved of the importance and ground for the decision. Information and time thus become key elements in the process, elements not always feasible in a fast-paced, globalized world.

The depth of Japanese belief in the *nemawashi* system is reflected in the tentacles it then extends. When a decision is made in Japan, those involved put their personal seal, or *hanko*, on the relevant documents much as Westerners would sign them. Those seals record judgments made by individuals on behalf of their organization, company, or country. If the decision later proves ill-advised for the group (nation, corporation), those individuals lose face and may be held responsible for their error in judgment or misdeeds. Individuals who have lost face may be forced to resign, a culturally accepted way to take personal responsibility for a judgmental error. Therefore, collective decision-making and slow, incremental steps limit the responsibility and risks for those involved in decision-making. Additionally, it ensures that all relevant parties have vested interests, to avoid recriminations from a minority group later, if something goes wrong. This is not a system which promotes either risk-taking or firm opinions in Japan. Indeed, there is a strong inclination toward ambiguity whenever possible, to allow room for 'misunderstanding' rather than 'error'.

Successors in a position, even if authorized to do so, often hesitate to overturn the decision of their predecessors, because that might be seen as a criticism of the prior decision-maker's decision. Thus the Japanese will often use precipitating events to overturn decisions with the excuse that events changed to force a new decision, which allows them to avoid the issue of seeming to criticize the prior decision.

The Japanese budget process factors into decision-making as well. Although the Japanese utilize an annual budget process, authorization and appropriations are done concurrently, and for the life of a program. That means that if a program is authorized, it will be funded to completion. While Washington is littered with the remnants of programs started and later stopped, if ever funded at all, in Japan programs are for all intents and purposes written in stone. In more than one instance this has resulted in 'white elephant' programs,⁵ providing another reason why mistakes are costly.

Finally, two other Japanese words provide insight into Japanese decision-making: *tatemaie* and *honne*. *Tatemaie* refers to the official reason for doing something, while *honne* refers to the real reason for doing it. Very often, the *tatemaie* and *honne* are markedly different. Knowing both allows businessmen and bureaucrats to cover themselves regarding each, in terms of appropriate rhetoric and activities. But the requisite information gathering and sharing process takes time.

Recognizing the need for a process more amenable to the pace of the twenty-first century, in May 2003 emergency legislation was passed in Japan providing guidelines for responding to a foreign attack for the first time since World War II. Included in the legislation was a legal framework for the

establishment of a national security council, and consequently a more streamlined decision-making process. While a major step forward, history dictates caution in expecting quick changes when it comes to altering cultural propensities. Previously, the Bank of Japan had been pushed into a private sector version of decision-making reform. Yet in February 2003 analysts were dismayed though not really surprised to learn that the Bank had also secretly established an internal body to deliberate monetary policy separate from the official decision-making Policy Board. Old habits die hard.

Therefore, the analytic question regarding IGS becomes whether the decision was typical of the normal Japanese dichotomy of decision-making choices, consensus or knee-jerk, or whether perhaps it signals the development of a third option allowing a more expeditious, but perhaps more risky process. From the May 2003 decision, it seems clear that if such changes are to occur, one area where they will likely start is within the security communities, because of a recognized need.

PROGRAM ORIGIN

Only six days prior to the nerve-rattling North Korean missile launch, Dr. Ichiro Taniguchi, President of Mitsubishi Electric Company (MELCO), presented his company's plan for an information gathering satellite system to an audience including many Liberal Democratic Party (LDP) Diet members. The MELCO proposal called for two optical and two radar satellites and associated ground support equipment. It was not the first time that this plan had been introduced. Indeed MELCO, Japan's largest satellite maker, had solicited interest in the proposal before with little success. However, on November 10, 1998, very soon after the *Taepo Dong* launch, when the Japanese government adopted exactly such a program, the *Asahi Shimbun* ran an article entitled 'Blueprint by MELCO' which noted the then apparent government willingness to jump at the only domestic, readily available, and coincidentally non-competitive, MELCO plan.

Timing is everything. In 1998, Nippon Electric Company (NEC), the most experienced Japanese optical satellite maker, was caught in the aftermath of a defense procurement scandal. Toyo Communications, a small defense supplier closely connected to NEC, had over several years, and with the assistance of NEC, overcharged the Japanese Defense Agency (JDA) on an equipment procurement program. The amount in question was substantial for a small procurement: ¥1 billion (\$6.9 million). But the practice was thought to be overlooked for some time, in part because the company provided jobs for retired JDA staff. Although overcharging is thought to be not uncommon in Japanese defense procurements, this example quickly gained considerable media attention. The ensuing scandal eventually led not only to the

resignations of Defense Agency Chief Fukushima Nakaga and NEC Corporate Chairman Tadahiro Sekimoto, but also to NEC being administratively debarred for one year from bidding as a prime contractor for government contracts.

As luck would have it, NEC was still under this administrative debarment in late 1998. Although NEC was and remains the most experienced optical satellite maker in Japan, MELCO thus became the default prime contractor for the radar satellites, its primary expertise, as well as the optical satellites. NEC did eventually become MELCO's subcontractor for the optical subsystem of the optical satellites, but MELCO acted as the prime for the entire system, including satellite busses and control systems. This was a windfall for MELCO, which had recently completed an integrated satellite facility that remained largely empty until the IGS program got underway. The loss of this program, along with a general downturn in the government and commercial space market, probably also contributed to the later spinout of NEC's space business, which combined with Toshiba's smaller space business to form the new NEC Toshiba Space Joint Venture.

Meanwhile, political and public reaction in Japan to the *Taepo Dong* was basically akin to that in the US to the *Sputnik* launch, including shock at how Japan could be caught so seemingly unprepared. The Ministry of Foreign Affairs (MOFA), the Diet, and the ruling Liberal Democratic Party all claimed to be completely surprised by the launch, and felt severe public criticism for their lack of foreknowledge and action.

The Japanese Defense Agency, however, was not at all surprised by the launch. Indeed the United States intelligence community, which has a close relationship with the Defense Agency, alerted JDA well in advance. JDA was so well prepared that a Japanese Aegis radar system-equipped destroyer was on station near the presumed flight path in the Pacific east of the main Japanese island of Honshu for some days before the missile launch. The destroyer actually tracked the rocket in flight and collected a substantial amount of data. That data, along with data collected by the US, quickly became the focus of efforts to determine whether the incident was a failed satellite launch attempt, or a ballistic missile test. Initially the rhetoric from both Tokyo and Beijing suggested it was a missile test. Analysis of the data by the US, however, supported the conclusion that the incident was likely actually an attempted satellite launch rather than a ballistic missile test.⁶ On 30 October 1998, though, the JDA released a final report that stuck by the earlier assertion that it was a missile test – which supported the Japanese rationale for building a reconnaissance system.⁷

The domestic organizational and political turmoil that followed occurred in part because intelligence regarding the pending launch seems not to have

reached the Diet or Prime Minister's Keizo Obuchi's office beforehand, despite the Defense Agency's evident prior knowledge and preparations. While the Diet and the Prime Minister's Office had previously shown relatively little interest in the *Taepo Dong* development, the intense public reaction galvanized the Diet and LDP politicians. They demanded development of a national capability to provide launch preparation indications. That MELCO was already standing by with blueprints – and faced no competition from NEC – was economically fortuitous for MELCO and politically fortuitous for the government, which was able to show decisiveness and a quick response quite rare in Japanese political life. By November 1998, the Japanese government had reached a decision to fund and build the four MELCO satellites, with NEC and Toshiba ultimately becoming major subcontractors. The decision, reached at a cabinet meeting on 6 November, also called for a budget appropriation as part of a third supplemental budget for the year.⁸

Simply stated, 'The purpose of the IGS system is to collect imagery information necessary to ensure [the] national security of Japan'.⁹ The planned system consists of two optical sensor (OPS) satellites and two synthetic aperture radar (SAR) satellites, along with dedicated ground stations for satellite control, data collection, analysis and dissemination. The first two satellites were launched on 28 March 2003, with the second pair to follow later in 2003. The OPS satellites are capable of one-meter panchromatic and five-meter multi-spectral resolution, with a frequency of observation stated simply as 'more than once a day'¹⁰ from 500 km orbits. The radar imagery resolution capability of the SAR satellites is between one and three meters, with the same revisit time. The total budget for the system is over ¥250 billion (or about \$2 billion) not including launch costs, more than budget-restrained Japanese officials had hoped to spend (about \$1.6 billion). The impact of those higher-than-expected costs (Americans had consistently warned the Japanese that their figures were likely optimistic) may become most critical in the plans to develop 'backup' satellites that amount to a new, improved, next-generation capability.

Japan's rapid discussion and commitment to the IGS development appears curiously anomalous for a country more commonly known for its slow, bureaucratically driven, consensus-based decision-making process. Indeed, it may be a unique example of a top-down decision by Japanese politicians in a situation without prior consensus by the bureaucracy, which normally develops national policy for later approval by the Diet. Also, when Japan announced that it would build what amounts to four reconnaissance satellites, there was speculation as to whether Japan planned to enter the world of military space in a much more concerted fashion. Even Japanese analysts supportive of the program noted that the decision could give rise to alarmist

views about Japanese intentions¹¹ both in domestic Japanese pacifist elements and among its wary Asian neighbors.

Another element of the program that drew attention concerned Japan's determination to develop the IGS program with very little external assistance. Although US companies certainly had more experience in building similar systems, especially the radar satellites, Japan was determined to develop the system as independently as possible. Indeed, despite decades of cooperation between US and Japanese space manufacturers, US participation was eventually confined to a limited number of common, key, space-qualified components from a list negotiated between the two governments, in total only about \$130 million of the program.

Together, these incongruities warrant a closer look at the decision-making process regarding the IGS program. The critical questions are whether the decision-making process surrounding IGS was simply an anomaly or whether it might signal a basic policy shift in both how things are done, and regarding future uses of military space and strategic intelligence.

REQUIREMENTS VERSUS CAPABILITIES

On 30 August 1998 JDA only knew of the upcoming launch because the United States Department of Defense told them it was coming. Japan was and remains clearly dependent on the US for missile launch indications, even from its closest neighbors. This is an unsettling feeling for any country, but perhaps particularly galling for a nation as proud of its technical prowess as Japan. Subsequent to the launch, there was a reaction, indeed some say an overreaction, on the part of the Diet and Prime Minister's Office to rectify its 'helpless' situation through the IGS program, along with a corollary increased interest in supporting further missile defense activity with the United States.¹² The IGS program would enable Japan to 'watch' for similar threats, and missile defense would enable it to respond to missile threats.

Clearly any Japanese government space program had to be carefully handled for domestic legal and political reasons. A 1969 Diet resolution banned utilizing space for military purposes. If strictly interpreted, Japanese Defense Forces could not even use space assets for communications. However, rather than a total ban, over the years this resolution has been interpreted to allow the Defense Agency to obtain or utilize space capabilities commonly commercially available. This 'dual-use technology' test means that hardware and capabilities strictly for military purposes are not allowed. Uniquely military hardware is fairly limited to such items as 'offensive' weapons (also an ambiguous term) and early-warning satellites such as the US Defense Support Program (there are no civilian uses for the DSP's infrared sensors' detection capabilities, which detect missile launches). Items

such as these are technically prohibited. However, if a space system is deemed dual-use, the definition of which has been interpreted to include capabilities such as communications and earth observation, it may be allowed for purchase or lease. Hence, without fanfare, since the late 1980s the Defense Agency has leased communications transponders on a commercially owned and operated Japanese telecommunications satellite. Additionally, the Defense Agency is a significant customer of commercially available space imagery, which helped fuel the controversy surrounding the decision to procure a expensive, risky, domestic solution while a cheaper, widely available, commercial solution presented itself.

In the weeks following the *Taepo Dong* launch, when public opinion and political debate flared over Japan's 'helplessness' in the face of North Korean launches, the multi-purpose, dual-use nature of the proposed system was stressed to the Japanese public in order to sell the IGS program. Defense Agency Director General Fukushima Nukaga and LDP Secretary-General Yoshiro Mori both spoke out in favor of the program, emphasizing the system's multi-purpose nature. When the Cabinet decided to adopt the program, the attendant government release specifically stated that it did not believe that the plan violated the Diet resolution.¹³

Just as public opinion in the United States flared far more than the government had expected with the launch of *Sputnik*, the Japanese polity reacted strongly to the *Taepo Dong* launch – with the same need for the government to be seen as responsive. Hence the government of Japan's rather hasty reaction to support the sole plan in front of them. However, whether or not the decision was an anomaly remains the more important analytic question.

JDA has long suffered a sense of frustration regarding strategic intelligence at several levels. They have been seeking what they call 'integrated intelligence' capabilities and processes, with little success to date. This effort basically envisions a plan not only for gathering and distributing information, but for containing information as well. The problems Japan has faced to date in intelligence have not been exclusively, or even primarily, in gathering information. Japan has no official secrets laws and protection of sensitive information is sometimes a problem.

Currently, besides information obtained regularly from the United States, JDA also has a ground station for high-resolution commercial imagery from Space Imaging. In fact about half of the imagery Space Imaging sells in Japan is to JDA. JDA has had problems both in getting information into the Prime Minister's Office, and in containing information once distributed to other parts of the government, including the Ministry of Foreign Affairs, where until recently few if any security systems are in place. So, would JDA like to have or does it need its own imaging capabilities? Certainly in general

independence is better than dependence. But will IGS provide better capabilities than currently available to the government? Perhaps, but if so probably only minimally, and mostly in terms of control and quantity, not quality.

After spending an estimated US\$2.2 billion for the satellites, not including launches (which will cost an additional \$250–300 million), Japan will have panchromatic imagery of approximately one-meter resolution, the same as that currently available commercially from the *Ikonos* satellite, owned and operated by Space Imaging, an early industry leader. But space imagery is available from several companies from different countries, spreading to more, and rapidly becoming more detailed. In March 2002 another commercial company, DigitalGlobe, began offering 60cm resolution imagery from its *Quickbird* satellite, launched the previous October.

In determining overall capabilities, however, one must go beyond resolution. Other factors such as the imagery quality, maneuverability of the satellite, the system life cycle, and analysis of the product are key. Satellite maneuverability, for example, in part determines how near-real-time an image can be obtained. Time required to position the satellite can in some instances detract from the value of the imagery to users, or can limit the number of different sites that can be viewed, and different satellites have different positioning speeds. Perhaps most importantly to Japan, however, utilization of the IGS system assures that none outside the government will know what they are looking at.

That same security concern has prompted other countries to seek space surveillance capability. Taiwan gained access to Israeli spy satellite data, EROS-1, in 2001, to supplement what it could purchase commercially but had to report to the US government. Taiwan will also soon launch its own ROCSAT-2, a satellite – like many – capable of two-meter scientific-cum-military purposes. Similarly, the Chinese Ziyuan-2 satellite launched in 2002 is also an ‘Earth resource satellite’ by design and proclamation, though its five-meter or less resolution and digital-imaging technology makes it suitable for military purposes. Much to the angst of Pakistan, India has its own remote sensing satellite, capable of less than three-meter resolution. Usage is constrained, however, due to what some consider an unwieldy intelligence chain in India, similar to Japan. Clearly, countries prefer to have their own source of surveillance data rather than relying on others or buying images commercially, but many political and technological obstacles remain in using the data generated.

An IGS Management Committee, chaired by the Deputy Chief Cabinet Secretary, and a subcommittee, chaired by the Director of Cabinet Intelligence, are responsible for IGS tasking. These oversight groups prioritize observation requests for the Cabinet Satellite Intelligence Center.

The Management Committee then receives the imagery data for transmittal to the Joint Intelligence Committee and the Cabinet Intelligence Committee. Fully staffed, the Cabinet Satellite Intelligence Center will have about 300 personnel, including staff recruited from JDA, MOFA, and the Cabinet Intelligence and Research Office (CIRO), as well as engineers and others from appropriate private sectors, who will be employed as civil servants. The staffing ramp-up will be slow, however, because of a shortage of experts trained in reconnaissance satellite analysis in Japan. Initially, the center is expected to have about 100 employees. The systems are expected to begin full information and transmission services in March 2004, after the launch of Optical-2 and Radar-2. The design life of the satellites is five years. Still, it remains to be seen how many 'real customers' there will be for the data, such as commanders, strategic intelligence analysts, and military operations planners, as opposed to political customers such as Diet politicians.

MELCO's marketing of its blueprint is understandable; marketing is always understandable. MELCO's desire to handle the program primarily on its own can also be explained as desiring to escape from dependency on US satellites and satellite components; these became more difficult to obtain after the Cox Committee hearings, which resulted in an even more convoluted and confused US export control system than the merely ambiguous and non-transparent system of the past.¹⁴ But there is more to the situation than that. Aerospace companies worldwide are consolidating, and Japan is no exception.

Japanese Aerospace

In the late 1970s and into the 1980s, Japan's National Space and Development Agency (NASDA) funded a series of experimental *cum* domestic, government-funded commercial communications satellites. MELCO, NEC, and Toshiba built them, albeit with significant assistance from US satellite manufacturers. The procurements were virtually non-competitive, with each Japanese company more-or-less getting 'their turn'. The US government finally responded with a Super 301 restraint-of-trade complaint seeking to open the bids to competitive bidding. As a GATT signatory, Japan agreed to abide by the GATT rules regarding the government procurement of 'non-R&D satellites' and to conduct all non-R&D government satellite procurements in transparent, open competitions. This new procurement policy put the Japanese satellite makers at a decided disadvantage against American and European companies with far more satellite construction heritage. Subsequently, Japan's space industry became a major supplier to US and European satellite manufacturers for many key programs. They did not abandon their ambitions to become prime contractors for commercial

spacecraft but rather focused on NASDA programs for several years, building their expertise and technical base.

By the late 1990s, MELCO was the largest satellite and ground-systems manufacturer in Japan, followed by NEC and Toshiba. Other Japanese companies such as Mitsubishi Heavy Industries, Hitachi, Ishikawajima-Harima Heavy Industries (IHI), and Nissan pursued different space technologies such as liquid fuel rocket engines and solid fuel boosters. Still, for all of these companies, space plays a small role in their larger business. MELCO's annual space sales hovered at about ¥100 billion, with NEC and Toshiba closer to ¥40 billion and ¥20–30 billion.¹⁵ Also, these sales depended heavily on NASDA contracts and component sales to US and European satellite makers.

The picture began to change in 1998. Not only did MELCO independently win the IGS program, but it also partnered with Space Systems/Loral of the US and won a \$320 million contract to build a hybrid commercial/military communications satellite called Optus C1 for Australia. Together, these programs provided what Japanese industry hoped would be the initial experience necessary to be competitive in the international market. Subsequently, speculation about consolidations proved true. In 2000, IHI reached an agreement to buy Nissan Motors' space manufacturing sector. NEC and Toshiba then announced that they would merge their satellite manufacturing operations. Some analysts foresaw the coming of an 'All Japan Space Corporation' emerging over the next several years, similar to the one created in Europe as the European Aeronautic Defense and Space Corporation (EADS) in 2000.¹⁶ Clearly, short-term benefits accrue for the Japanese aerospace industry from the IGS program, but what is the impact on Japan's national security?

NEAR AND LONG TERMS IGS BENEFITS

The shock of the *Taepo Dong* launch on the political community certainly opened the door for Japan's intelligence community to make its case for an integrated intelligence system. Whether this effort can be translated into an effective plan for implementation remains to be seen. North Korea's continued defiance over its nuclear program will likely provide the public and hence political impetus for a continuation of efforts. There is already recognition that North Korea can fuel its missiles in two hours. Unless one of the four satellites happens to be above the base in question during that period, the indigenous data void remains. To ensure round-the-clock surveillance would take 16–20 orbiting satellites.¹⁷ Still, the management of any data provided by the IGS systems will be a small but crucial validation of the importance and contribution of an integrated intelligence plan.

Privately, Japanese officials put their hopes for the acquisition of real capabilities in the two 'back-up' satellites, one OPS and one SAR, currently expected to be launched in JFY 2005 and JFY 2006.¹⁸ Although their capabilities are officially stated as basically the same as the original IGS, these satellites are seen as the real opportunity for qualitative advancement. A research phase (concept design/trial manufacturing and testing) began in JFY 2001. The development phase (critical design/manufacturing) started in JFY 2003. Prior to building anything, considerable back-room discussion regarding requirements that will actually enhance Japan's security position are certain. However, with Phase 1 already over-budget and the overall Japanese budget under intense pressure and scrutiny, it may be difficult to fund Phase 2 to the level necessary to really make any real qualitative leaps beyond the capabilities of commercially available imagery or the initial IGS.

THE IGS DECISION: NOTHING NEW

Japanese researcher Tetsuo Tamama asks in a September 2000 article¹⁹ whether Japan is a threat to its neighbors, if threat equals capability times intention. He then proceeds to answer 'no' based on what he calls the 'inertia element'. Among the examples he uses to explain the inertia element is US–Japan cooperation on missile defense. Tamama points out that 17 years elapsed between then US Defense Secretary Casper Weinberger's May 1983 letter to then Japanese Prime Minister Abe regarding potential Japanese cooperation with the US and the Japanese government's 2000 commitment of ¥2 billion to basic research. He sees this time lag, and continued Japanese reluctance to talk about missile defense cooperation beyond the cooperative research phase, as indicative of the lack of any determined intention to move forward. Although it could be said that the US too has been talking about missile defense for even longer than 17 years without a deployable program beyond (a tenuous) PAC-3, there are differences. The US missile defense development has been stymied by both technology and political will. In Japan, a typically reluctant political will, driven by a cultural propensity toward time-consuming consensus decision-making, resulted in extended timelines for commitment and progress. The reasons for the glacial speed of decision-making in the case of missile defense, however, are pragmatic as well as cultural. The Japanese are concerned that missile defense will meet the same eventual fate as the Strategic Defense Initiative or the Superconducting Supercollider earlier, both programs the Japanese were invited to join.

Occasionally, however, there may be a political need to move quickly on an issue to respond to public pressure. Under such political pressure,

an overreaction like the decision to adopt the IGS program can result. Nevertheless, in such a situation something will be built and something will be launched, to avoid anyone losing face. The capabilities thus obtained, however, may be marginal, as is the apparent case with the IGS.

Two Japanese OPS and two SAR satellites will provide a certain independent imagery capability, though not necessarily of the same quality and certainly not of better quality than that currently available through government or commercial channels. Japanese use of commercial imagery will likely not decrease much, if at all, and reliance on certain types of imagery provided by the US will continue. However, as someone in Japan said to one of the authors, something is better than nothing. For those involved with the IGS decision, including not just bureaucrats but also Diet members and officials in the Prime Minister's Office, that is certainly true; as they perceive that their decision was rewarded politically by the reduction in public anxiety in the aftermath of the decision.

That leads to the question of whether or not the decision was an anomaly. Evidence here supports the persistence of the traditional Japanese decision-making typology: decisions driven by the bureaucracy, which are hampered by inertia and risk-avoidance, but also enjoy widespread support and understanding, and those driven by politics or politicians, which tend to be reactions to specific circumstances, and not necessarily well thought through and may lack wide support. IGS is analogous only inasmuch as it was an example of the latter, with wide public support due to reaction to the perceived North Korean threat. As long as this typology remains entrenched, effective long term planning in Japan will remain problematic.

In terms of an actual qualitative increase in Japanese security capabilities, the next generation, 'back-up' IGS satellites are key. There, the Japanese have an opportunity to discuss and decide, within a reasonable amount of time, requirements which they cannot fulfill through other means, or within an acceptable level of dependence on foreign support, and build the hardware to satisfy those requirements. Additionally, they must consider whether Japan has sufficient trained analysts to handle the additional information that will be collected, and what to do about it if they don't. Japan has the opportunity with the next generation satellites to develop a near and long term plan for an integrated intelligence system, including the IGS hardware, and implement it without being hindered by cultural inertia. The risks are political, not technical. They seem well worth taking for a country that is increasingly assuming a regional and global role in security affairs more characteristic of a 'normal' country, the oft-stated goal of key elements in Japan's political and security establishments.

CONCLUSION

The IGS decision seems to be a variation on a traditional Japanese decision-making theme rather than a harbinger of a shift in the policy-making paradigm of Japan. On later security policy issues, including the Japanese participation in Operation Enduring Freedom in support of the war on terrorism, and the response to the December 2001 sinking of the presumed North Korean 'mystery ship', the Diet has taken the lead only when forced to do so by political events, and remains reactive overall. Otherwise, security policy and legislation has been developed and coordinated within the bureaucracy based on Cabinet general guidance, and later presented to the Diet for approval. So it appears that the IGS development decision was an anomaly, and that Japanese security decision-making will largely remain the purview of the bureaucracy, unless the May 2003 legislation forces change where other efforts have been unable to do so. If the overall IGS system development results in the establishment of an integrated intelligence system that better serves the needs of that security bureaucracy, then that may well prove to be the most important if somewhat coincidental development of the IGS saga.

NOTES

The views expressed in this article are the authors' alone and do not represent the official position of the Department of the Navy, the Department of Defense or the US government.

A condensed version of this article can be found at < www.YaleGlobal.yale.edu > , 31 March 2003.

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3. Joan Johnson-Freese and George Moore, 'A Disturbing Trend in Space Science: Process Over Product', *Spaceflight* (1995) pp.75-78; Joan Johnson-Freese and George Moore, 'Clash of the Titans: Competing Space Policy Goals', *Nature*, 2 December 1993, pp.400-402.
4. See Joan Johnson-Freese, 'The Space Policy Decision-Making Process', in *Over the Pacific, Japanese Space Policy Into the 21st Century* (Kendall Hunt 1993) Ch 5.
5. The on-going Japanese cold fusion program and its ill-fated nuclear powered cargo ship, which was eventually converted into a research vessel, are exemplary.
6. David A. Fulghum, 'North Korean Space Attempt Verified', *Aviation Week and Space Technology*, 21 September 1998, p.30.
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10. IGS unclassified brief.

11. Tetsuo Tamama, 'Is Japan a Threat to Her Neighbors?' Japan Defense Research Center, DRC Annual Report, September 2000, p.127.
12. See *Asahi Shimbun*, 22 September 1998, p.2.
13. Kyodo News Service, Tokyo, 25 November 1998.
14. Joan Johnson-Freese, 'Becoming Chinese: Or, How U.S. Satellite Export Policy Threatens National Security', *Space Times* (January/February 2001) pp.4-12; Joan Johnson-Freese, 'Alice in Licenseland: U.S. Satellite Export Controls Since 1990', *Space Policy* (August 2000) pp.195-204.
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16. Indeed Hitachi and MELCO announced in March 2002 that it would integrate their system Large Scale Integration (LSI) (semiconductor chips) businesses, indicating that consolidation for international competitiveness continues, at a slow pace. Press Release, MELCO and Hitachi, 'Hitachi and Mitsubishi Electric to Integrate System LSI Businesses', 18 March 2002.
17. Tetsuo Hidaka, 'Spy satellites to watch N. Korea: Extra surveillance to reduce reliance on U.S. intelligence', *Yomiuri Shimbun*, 4 March 2003, p.3.
18. Japanese fiscal years from April to March.
19. Tamama (note 15) pp.119-28.

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