

10 Rebuilding of J.S.P.

1972 was for me a special year in my life. Besides being the year that we built our new house in Mejirodai, Hachioji City, it was also an important year establishing the research direction in the University. In July of this year ISP Congress was held in Ottawa, Canada. I attended as secretary of Professor Maruyasu. On the second day of the congress, i.e., July 23, the United States launched the first earth observation satellite, LANDSAT-1, and the first received satellite imagery was shown at this international conference. It was announced that people of any country could purchase satellite imagery of any other country. At that time, the Vietnam War was still on going. Photogrammetric technology for the production of topographic maps from aerial photos taken from airplane was suddenly changed by this epoch-making science and technology revolution that was capable of making maps of the whole world from satellite imagery. With the advent of this science and technology eight years later the name of I.S.P. was renamed to International Society for Photogrammetry and Remote Sensing (ISPRS). Remote sensing as a new branch of knowledge was born and had become my main professional technology area. I was a lucky man who could tackle research of this new science and technology area called remote sensing from the very beginning. It can be said that this was the epochal happening in my research life.

Some Japanese professors whose names were not well known, set up a new Japan Society of Remote Sensing. Professor Maruyasu also left JSP and became one of the three founders of the new society. This resulted in successive withdrawals of membership of JSP with only 500 members left, which was the limit of operation of the Society. The publication of JSP journal was delayed and the salary of office staff, Ms. Soejima, was also cut. Professor Maruyasu just left his comments “Murai, please look after JSP.” Professor Nakamura, my senior was asked to take up the position of President with me as Secretary General to try to revamp the Society.

At that time Fujino Chiwako san, my secretary was asked to help by stopping the outsourcing of the editorial work of the Society’s journal. She was sent to the editorial seminar/workshop of Asahi Culture to learn the basics of editorial work. When exchanging name cards with the people of the enterprises, a request was made for placement of advertisements in our magazine. If contract research was received through the Society, ten percent of the income would be assigned to the Society. Seminars presenting research papers in spring and autumn were customized to be held in Tokyo for spring and in other places for autumn. With lots of ideas being considered and implemented, the Society emerged from its deficit condition.

The main members of the Society also reemerged, making it more active. It was fortunate that the official representative of Japan in ISP was JSP, and not Japan Society of Remote Sensing. It was the period of high growth of the Japanese economy and the progress of economic development was spectacular. Gradually there were high expectations to hold the first Asian ISP Congress in Japan. At the 1980 ISP Congress held in Hamburg, Germany, it was expected that Japan would propose to be candidate for the 1988 Congress. When the quotation of expenses of 300 million yen to hold the Congress at Kyoto International Convention Center for ten days was received, the large amount seemed impossible to collect, and therefore the proposal was abandoned. However, at the Congress four years before, Professor Nakamura proposed Tokyo as a candidate but was defeated. Then Professor Nakamura said “Murai, boldly propose the candidacy and I will give full support.” In the end, I made the proposal for candidacy of 1988 ISP Congress and Japan was selected by ballot. Details will be described in Chapter 11.

After Kyoto ISP Congress ended in great success, I became the de-facto responsible person of JSP. We had Professor Nakamura as President, but the management was left to me. Since we had a profit of 50 million yen from the Kyoto Congress, the problem of funding was resolved. The office of the Society at the rented space in one corner of the university research center was moved to a rented room in a building at Ikebukuro. Staff Soejima san,

was released from her low quality office accommodation, since we could rent a cheap priced room at the Japan Surveying Association where I used to be President.

I would like to say something about the management of JSP after Kyoto Congress. I was imbued with the philosophy for leadership from two great men of ISP, namely, Dr. Fred Doyle of U.S Geological Survey and Professor Gottfried Konecny of Hannover University of Germany. I was taught by Dr. Doyle the former ISP President, that if one cannot make a difficult decision even in the presence of opposing opinions, he cannot be a good leader. This is the first step of leadership. From Professor Konecny I was strictly instructed never to let crocodiles enter into the organization. Even if just one crocodile is let in, the organization will be destroyed. There are two categories of humans, elephants and crocodiles. Elephants work to feed themselves, but crocodiles are lazy animals. They do not work, but just wait for food to drop into their mouths. Professor Konecny taught me that the organization should comprise only those who work. I followed the philosophical thoughts of these two mentors. At the selection of directors of the Society, those haughty academicians thought to be like crocodiles were left out and new life was injected. Disparagingly speaking crocodiles were critical that JSP was Murai's family, but I did not pay attention.

After Professor Nakamura, I took charge of the President and continued for 12 years. Let me summarize my achievements. Firstly, I set up the rule to have annual conferences in spring in Tokyo and academic seminars in autumn in other places. The book “Analytical Photogrammetry” which included difficult theoretical equations of Photogrammetry was printed at the Society’s expense. More than 20 years after publication, the book is still available in the bookshop. The rule was set to pay 10% overheads to the Society in the case of university professors receiving contract research through the Society and the income was useful for the operation of the Society. The most important thing was how to secure members. Since we had to compete with the newly established Japan Society of Remote Sensing, members did not increase as expected. Around one thousand and a few hundred members could gather as good colleagues. The happiest occurrence was the transformation into an organization in which young professors and researchers cooperated positively in the management of the Society.

During the presidency of Professor Maruyasu, the atmosphere of board meeting was like a coffee salon, not conducive for young people to cooperate. The papers for presentation at Society conferences were hard to assemble. Mr. Oshima of the office had to make many phone calls before enough papers were collected. Young man like me felt uneasy and so left the meeting quite often.

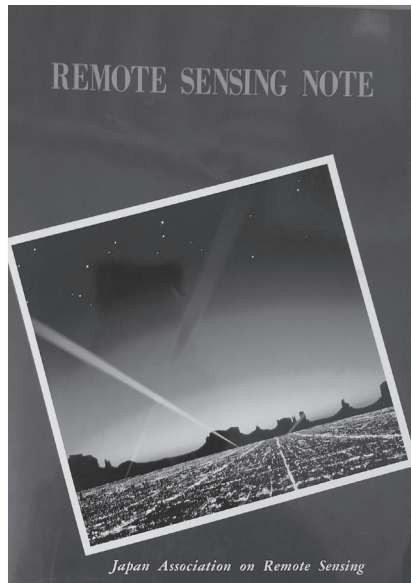
After my retirement, my former student Professor Chikazu Hirobumi of Tokyo Electricity University took up the Presidency in line with Murai policy. It was gratifying to know that its operation is healthy. Recently after the retirement of Professor Chikazu, Professor Shimizu who retired from Todai took up the presidency of JSP and continued along the same lines. Professor Shimizu was the student of Professor Nakamura Hideo, so he was like a brother student of mine.

Now at the spring and autumn society meetings, young students and professors are always active making preparation and after that all join in the drinking party. Since I am a senior, I just participated in the drinking party to exchange views with young people. I am truly delighted to see the growth of unity in our Society. Having experienced the crisis of the Society I regarded JSP as my son, and now like my grandson. In fact, students of Professor Chikazu are now filling the important positions of the Society, so it is the period of my grandson. It is gratifying to see Mr. Nakagawa of Shibaura Technical University and Mr. Kunii of Agricultural University, etc. working hard for the Society. My responsibility as senior is to watch out for those who might destroy the Society. I hope to do my best in the role of overseeing the continuation of the Society where good colleagues truly work hard together.

I am now an honorary member having reached the age when I can be quiet, but I still present papers at the spring and

autumn conferences continuously. I learned this from my eight years senior Mr. Araki Harumi who still presents papers even after the age of 80. This is also in response to the request of the office that when seniors make a presentation, it has a very good effect on the young generation.

Mr. Araki is the person who invited me to do research together on earthquake prediction, since he thought that it was possible to use GPS for earthquake prediction. This happened two years after my retirement from Todai, i.e, in 2002. I am obliged to Mr. Araki who convinced me to concentrate on a high accuracy prediction method for the past 20 years. At present, Mr. Araki is over 90 years old and retired from the research on earthquake prediction, but his spirit is still young and always encouraging. At the time he was a senior staff at Asahi Koyo Co. I owed him a lot when I was writing up my dissertation and became Doctor of Engineering. From this relationship although our ages were different, we had the same feeling and kept company as research colleagues. The fact that I could almost complete the earthquake prediction method was due to the contributions of Mr. Araki. To this I offer my sincere gratitude, but I am worried about his recent health issues.



11 Establishment of ACRS and the Conferences

In Showa 48 (1973) the international conference on the utilization of satellite data, one year after the launch of Landsat-1, was held at EROS Data Center in Sioux Falls, South Dakota USA, which was the custodian of satellite earth observation data. I was the head of Japanese delegation with the late Professors Sakata and Shimoda also attending. Sioux Falls was a quiet town, so every night we all assembled in a hotel room drinking whisky, while discussing what Japan should do in the future regarding earth observation. At that time, there were some untrustworthy academicians making disgracing comments to newspapers about misleading information extracted from Landsat imagery. For example, there appeared fake news that by photointerpretation of satellite imagery there was a large fault running east-west through the Tokyo area. From my investigation of the infrared band of satellite imagery, since many buildings were concentrated along the Chuo Line stretching from east to west through the Tokyo area, they were the reason for the dark band in the images, claimed erroneously to be a fault.

Then the conclusion was reached that we should study remote sensing thoroughly by setting up a truly worthy research society with me as Secretary General and the late Professor Kato of Tohoku University as President. The society called Japan Association on Remote Sensing (JARS) was thus set up in 1974. Professor Kato

was a quiet professor, with affable kindness, an excellent professor who just kept saying “that is all right.” In reality I was entrusted with the management of JARS. Immediately, together with our colleagues, we developed and published a textbook entitled “Principles of Remote Sensing”, the first of its kind in Japan. Monthly study meetings were also held.

Once Landsat satellite imagery and digital data became available around the world, there were global level discussions concerning the earth’s environment. For example, the speed of destruction of the Amazon tropical forest each year, while the depletion of tropical rain forests could clearly be seen. Likewise in Asia, destruction of tropical forests, desertification, sea and ocean pollution, etc. could be monitored from satellite imagery. At present this is also being used for the analysis of carbon dioxide in the atmosphere, caused by greenhouse gas emissions.

At that time, the most advanced remote sensing research was being carried out at the Willow Run Laboratories of the University of Michigan (briefly called ERIM) USA. Based on military funding a thermal infrared sensor was also being developed. Symposiums on remote sensing were being organized every 18 months. In April 1978 the ERIM Symposium was held in Manila the Philippines where I had the opportunity to liaise with many Asian researchers. In October of the same year with JARS as the focal point, I visited remote sensing agencies of three countries,

i.e., Thailand, Indonesia, and Philippines. At this juncture, many opinions were being expressed that remote sensing conferences should also be organized in Asia. The objectives were to discuss how Asian researchers could apply remote sensing technologies to solve Asian problems.

After overcoming many hurdles and complications, I succeeded in organizing the First Asian Remote Sensing Conference (ACRS) in November 1980 in Bangkok, Thailand together with the great support of Suvit, Director of Remote Sensing Division in Thailand and my good friend Manu. It was necessary to gain government approval to organize an international conference in Thailand. I alone was called to explain the objectives, the importance and the impact, the budget etc. to the Thai government remote sensing coordinating committee meeting. Although Suvit and Manu were also members of the committee, the decision was to be made by more senior people. I enthusiastically presented the importance of organizing this conference and proposed the budget which would be totally borne by Japan. After my explanation, I was told to wait outside the meeting room. I thought that the waiting time was about 10 minutes, but it felt like a lot longer. When I was called back to the meeting room, the Secretary General of NRCT gave the word of acceptance. It was later revealed that Manu had argued fervently in support of my proposal. The First ACRS was inaugurated by the Undersecretary of the Prime Minister's Office, the supervising

organization of NRCT. The presentation to NRCT was supported by automatic slide projection, which was warmly appreciated.

At that time, Bangkok was not well developed, taxis were secondhand cars and the seats might spring out. At this conference I developed the future structure of ACRS. In Asia the most important thing is mutual good friendship, not only in presenting papers, but also the friendly relationship among participants from different countries. I rented the luxurious boat of the Oriental Hotel, a five star plus hotel and invited not only the participants but also their friends and relatives to join the party on the boat free of charge. Normally Thai people would not have an opportunity for such experiences, so there were many friends and relatives attending the party. Dinner was buffet style with unlimited drinks including beer and whisky. The total cost was about 300,000 yen. Thai people enjoyed it very much and joined the Thai dancing with the “Loi Krathong” song. Participants from other countries also joined in the dancing and singing. Everybody enjoyed the party so much and had a feeling that “Asia is one” as I had hoped for. Participants singing and dancing thus became a permanent activity of the welcoming party of succeeding conferences.

At this conference, China proposed to host the next conference. Actually, one year earlier I had visited China without informing the responsible organization in advance of my hope that they would sponsor the next conference, but I did request

cooperation. The invitation this time was deemed as a positive response to my earlier request.

The 2nd ACRS was held in Beijing, China in November 1981. At that time, China had just opened up, but the Chinese people were still dressed in Mao suits and wore Mao caps. There were mostly bicycles on the roads and bus was the main means of transportation. In my opinion, the weakest aspect of Asia lies in its consistent engagement in wars, rather than forming friendly relations to achieve unity amongst nations, and thus limiting progressing that should be achievable. Therefore, I decided on a motto for the Beijing conference, “Friendship First Money After” and I always repeated this at the welcoming address. At that time foreigners could not choose which hotel they stayed in and could not eat at restaurants unless they had a voucher. This was a controlled economy. Participants from abroad therefore stayed at Friendship Hotels in the form of a group tour, based on the concept from the Soviet Union. On the first day of the conference, I arranged a party to welcome Asian participants, each country joined in the singing and dancing thus enjoying the cultural exchange. A tradition was introduced in which a committee considered which countries were awarded first, second and third prizes for their performances.

The welcome party has the purpose of promoting friendship among Asian people. China as host country was so kind as to use

Great Hall of the People as the venue for the dinner party. I was seated next to Fang Yi, Deputy Prime Minister. My secretary, Ms Fujino sang a Japanese song. Later I was told that this was the first time that singing was allowed in the Great Hall. During the conference, representatives from participating Asian countries signed the statutes officially establishing Asian Association on Remote Sensing (AARS) for which I was selected Secretary General. In Asia political intervention is difficult to avoid for Presidents. Therefore, in the statutes there is no position of President. In reality I was the representative of AARS per se. Since its inception until the year 2009 at 30th ACRS in Beijing, I was responsible for organizing the conferences as the head of the organization for 30 years. After that the post was handed over to Professor Cho Kohei of Tokai University. I remained as Chairman of Advisors of AARS.

At 9th ACRS held at Ambassador Hotel in Bangkok, HRH Princess Maha Chakri Sirindhorn graciously presided over the opening ceremony. Since HRH was interested in remote sensing, she was the Keynote Speaker presenting her research paper on application of remote sensing to monitoring of swamp forest in the south of Thailand.

The list of countries where I was responsible for organizing ACRS are as follows (some cities and countries held multiple conferences, so the list is by timeline).

Bangkok (Thailand), Beijing (China), Dhaka (Bangladesh), Colombo (Srilanka), Kathmandu (Nepal), Hyderabad (India), Seoul (Korea), Jakarta (Indonesia), Kuala Lumpur (Malaysia), Guangzhou (China), Ulan Bator (Mongolia), Tehran (Iran), Bangalore (India), Nakhon Ratchasima (Thailand), Manila (Philippines), Hongkong (China), Taipei (Taiwan), Bhusan (Korea), Chiangmai (Thailand), Hanoi (Vietnam). So many cities in Asia were the venues of the conferences. This might be because I was still young and energetic, and it may seem a bit of an exaggeration when some people in Asia called me “Father of Remote Sensing”.

Registration fees for the conference Monday to Friday was set quite cheap to enable students and participants from Asia to have more chance to participate, i.e., at around 20% of registration rates in the U.S. or Europe. Lunch and welcome party were included in the registration fee. The dinner meeting of the organizing committee and representatives of each AARS member country were hosted by Japan, and sometimes from my own pocket money. At the welcome party with singing and dancing by representatives from each member country, there was a referee to consider winners of prize money, first prize (\$300), second prize (\$200) and third prize (\$100) from my own pocket money. The welcome party was much appreciated since it was the activity revealing arts and cultures of Asian countries.

The most difficult problem to manage was that of Taiwan. Since China would not accept the name “China Taipei” being used, ACRS adopted this naming without recognizing it as country, just a region in the same way as Hong Kong was recognized.

Besides Thailand and China, some difficulties that I encountered in organizing ACRS may be summarized as follows:

In Dhaka of Bangladesh, the venue of 3rd ACRS, as soon as we stepped out of the airport, foreign visitors were swamped by many beggars. When reaching the waiting bus, windows were knocked asking for money. When leaving the hotel, a beggar who was a mother cuddling a child would approach us and 4-5 groups of the same type people would follow us, so each day it was a hectic moment before getting on the bus.

The most important remote sensing application in Bangladesh was the survey of damaged area caused by flooding of Brahmaputra River, about one third of the country. The more surprising result was that after flooding there were struggles for ownership of land for farming along the riverbank for several kilometers wide, since this was a fertile land with no owner. Those who arrived first were the winners and occupied the land. But when the next rainy season comes there might be flooding, and they might lose their lives. Even though they risk their lives, the family was more important. Satellite imagery depicts the land use pattern but also reflects some sad facts.

There was a special experience at the 4th ACRS in Colombo of Sri Lanka. At that time there was an ongoing civil war between the Tamils and Singhalese. I was travelling alone and after leaving the airport and on my way to the venue of the conference, which was a resort hotel in the suburbs, I was stopped for body search 6 times. The soldiers took my ballpen, my necktie pin and other possessions. On the way I saw some Singhalese shops burned out by aggressive Tamils. During British colonization, the British put up resistances and brought in Tamils from India to work in tea plantations.

But at the hotel, the venue of the conference, it was like another world. The conference and the party went on joyfully. After the conference, while waiting several days for the next flight home, Mr. Sarat, staff of Survey General Mr.Nanayakkara, representing the host organization, and who contributed most to the organization of the conference, came with his wife and a small daughter. He took me to visit the pool of the most expensive resort hotel. Usually, only white Europeans or Americans could afford to stay at high end hotels. His wife and daughter were very excited to visit such an excellent swimming pool. After that I treated them to lunch at this hotel, giving them a good experience. After a long absence, I met Sarat and his daughter who had grown up to become an adult, and they said that the event would remain in their memory for a long time.

As for 5th ACRS at Kathmandu in Nepal, an unforeseen event occurred. Most foreign participants would travel via Calcutta but the airplane I was on developed a technical problem necessitating an overnight stop in Calcutta. The conference was opened by the King of Nepal but without attendance of many delayed foreign participants who arrived after the opening. A big problem occurred after the Nepal conference, when it was planned to travel by bus from Kathmandu to Pokara, a tourist location not quite yet developed. Every morning the villagers would use the courtyard to relieve themselves since there was no toilet in the house. Consequently underground water might have been affected. Several people in the party contracted diarrhea, some even had to be admitted to hospital with typhoid fever. As for myself, at the beginning the symptoms were minor, but after returning to Japan, diarrhea continued for one month, my body weight dropped from 80 kg to only 65 kg. When I visited a clinic in Roppongi, the doctor just sent me home saying that such a serious disease was incurable. Then, I decided not to go to see the doctor again, except for problems with my eyes, teeth, or ears. I was steadfast in not taking medicine. I recovered from the diarrhea, but my body weight did not return to normal. Those muscles developed from rowing training all disappeared and my body weight did not increase afterwards.

6th ACRS in Hyderabad, India was held according to Indian style. The satellite remote sensing center was located in this city,

so it was very appropriate as a conference venue. At the opening ceremony girls dressed in traditional costumes came to scatter beautiful flowers in front of the Director General, host of the event and me as Secretary General of ACRS. The conference went on normally, but Indians were fond of arguments, therefore Q&A always took more than the allotted time. Free lunches were served as Indian food with Indian people using their right hand fingers to take food, but spoons were also prepared for foreigners. Lunch was not served in the room but in a very big tent nicely decorated like as in the circus. I had requested the host to bring traditional Indian culture instead of western culture to the conference, with the thought that getting in touch with different cultures and mutually accepting other countries' traditions in Asia was important and I am delighted to see that this happened.

Thereafter the meeting of ACRS was organized according to the above described arrangements. I would like to mention some special impressions of ACRS:

13th ACRS was held in Ulan Bator of Mongolia in 1992 with my friend, Mr. Sandaar a Mongolian as the host. After World War II, this country became a tributary state of the Soviet Union but had since gained independence. The conference was held in early winter, with very cold temperatures, around minus 10 degree Celsius. Japanese could stand this but for Thais or Indonesian people coming from tropical countries this was quite

a problem. Buildings looked Russian in style making one think that this was a city in Russia. But outside the city, people lived in tents called Yurts (in Japan it was known as Pao).

The elevator of the hotel was broken so I had to go up and down by the stairs. Almost no vegetables were available for food, just meat. Incidentally, HRH Princess Maha Chakri Sirindhorn of Thailand was invited to visit Ulan Bator at the same time and came to the welcome party. I used to have an audience with HRH, so HRH was delighted to attend the party, but Thai participants were very excited. The Minister of Mongolia also attended the party and joined in singing the “Loi Krathong” song and Thai dance with HRH and other people. Everybody was happy entertaining. In this conference, together with Professor Armin Gruen of Switzerland in the name of White Elephant Club (WEC), we designed and arranged the lectures about how to write a thesis, how to write a research proposal requesting research funding, and how to present the thesis or dissertation. This drew a big audience and received very good response. Thereafter such a session has been organized in every ACRS.

14th ACRS was held in Tehran, Iran in 1993. Iran is a Muslim country and very strict in keeping old traditional customs. Western countries accuse Iran as a country of inequality for women. I happened to get in touch with an Iranian involved in remote sensing enabling me to organize ACRS in Tehran. As soon as

the plane entered Iranian air space, all women passengers even foreigners had to wear a veil. The opening ceremony began with a recital of Al Koran with loud voice like a song. Men and women sat separately. At that time, tennis was a favorite sport. Ms Fujino, my secretary would like to play with me at the tennis court of the hotel, but that was stopped because men and woman could not play together. Since it was hot outside, I wore short pants and as I walked past the lobby, I was told to wear long pants. Besides, there were other annoying customs. But I considered it as good experience to learn about the strict regulations of Islam. No alcohol was allowed at the party resulting in lack of entertainment but the conference went well with good impressions received from all participants. I had the chance to collect such experiences which demonstrate that in Asia there were dissimilar cultures.

After the conference we visited Isfahan the old capital, a beautiful city with Imam Mosque, the wonderful 33 Arch Bridge, the only Persian architecture in the world. I was surprised that we were allowed to go inside the mosque. We visited the market that was like a maze but very interesting, with a feeling of going back to mediaeval times. Iranian tea and bread were very delicious. Even though there might be some inconveniences arising from difference in customs and culture, it was a good outcome to have organized the conference in Tehran.

20th ACRS was held in Hong Kong in 1999. The Chinese people felt relaxed because Hong Kong had just been returned to China shortly before the conference. Chinese style of expression was quite evident. Some important figures came from the mainland to participate. The conference ran smoothly almost to the end. The welcome party was held at a luxurious restaurant with delicious food. However, there happened a big problem on the last day. It was decided to hold the next conference in Taiwan in the coming year. As the video introducing the venue was shown, there appeared the word “ROC” and Blue Sky White Sun Flag (Taiwan National Flag). Chinese delegation immediately rose and protested to have the video cut off. I apologized to the Taiwan delegation but showing these details was not acceptable. The Chinese delegation asked this matter to be put on hold. I happened to have a scheduled flight to Beijing from Hong Kong, so I asked to discuss the matter there. In Beijing I express my regret again and promised to be careful not to let such things happen again. The matter thus ended peacefully, but in the proceedings some papers still had the name or marking of ROC, so new proceedings had to be printed.

25th ACRS was held in Chiangmai, Thailand in 2004 at the Sheraton Hotel. HRH Princess Maha Chakri Sirindhorn graciously chaired the opening ceremony. Since it was the 25th anniversary of ACRS there were many participants totaling 750 people, including 350 Thai participants. Several ISPRS Directors and their wives also

attended including Taeko, my wife who attended for the first time. Wives of friends from western countries acquainted with international meetings also joined with Taeko for a study tour of Chiangmai. Since then, directors of ISPRS have participated in ACRS every year, which is evidence that activities in Asia cannot be overlooked. There was a party held to celebrate my 65 birthday. Ordinary Members of AARS including countries and regions reached 28. On this occasion HRH Princess Maha Chakri Sirindhorn bestowed Boon Indrambarya Medal to more than 10 people who contributed to the advancement of remote sensing in Asia. As for myself and Dr. Kaew Nualchawee, we both received Boon Indrambarya Medals for the first time from HRH during 16th ACRS at Nakhon Ratchasima in 1995.

Another delightful outcome was the printing of the book entitled “Contribution of Shunji Murai to AARS” with Dr. Rathore as the focal point in the preparation and distributed to members of AARS. In Thailand, Loi Krathong festival is held on the full moon night of 12th month of lunar calendar. Krathong is a banana leaf floating vessel and candle is put inside and lit before letting it float on the river or a pond. I also joined in this festival.

It was heartening to see Mr. Manu and Professor A.J. Chen of Taiwan who were great colleagues, to overcome many obstacles that had existed from the beginning, to also join the conference. It was the great support of Mr. Manu which made it possible to

organize the 1st ACRS in Bangkok 25 years ago. Professor A.J. Chen was instrumental in the negotiation of difficult international problem, i.e., “One China Policy” with discreet prudence, resulting in both sides as ordinary members.

30th ACRS was held in Beijing, China in 2009. I was already 70 years old and had been responsible as Secretary General in organizing ACRS for 30 years. Therefore, I stepped back, and my successor was Professor Cho Kohei of Tokai University. The official appointment was announced with two deputy Secretaries General, one from China and one from Vietnam for good balance between China, India and neighboring countries. The selection of Professor Cho, a Japanese not involved in politics was considered most appropriate. In this conference “Murai Award” was set up to be presented to the best research paper in the conference.

At the opening ceremony, I delivered a special lecture entitled “History of 30 years of ACRS” and presented Honorary Membership to those seniors who had contributed greatly to the objectives of ACRS. At the dinner party after a grand opening ceremony on the first day, there was a show of aerobics and Chinese ancient martial art. I was surprised to learn that this was also the show for my 70-year birthday. I had thought that I had been struggling all alone but realized that people around me had been supporting me all through.

35th ACRS was held in Naypyidaw of Myanmar in 2014 after the country was changed to the government under military rule and the capital was moved from Yangon to Naypyidaw for security reasons. We were told that there were direct flights from Bangkok to Naypyidaw but the flight was cancelled. We had to fly to Yangon and then take a taxi. After negotiations the taxi fare was settled at \$150, with time for toilet and dinner, so after five and a half hours and a long search we finally arrived at the hotel at 8.30 p.m. The Hotel was in the middle of the field with nothing around.

At the opening ceremony, five responsible ministers in military uniform came to participate. After that I was the first speaker but before I took the podium, one staff told me that “30 minutes previously allotted time please make it in 15 minutes since there are military officers in the room.” I had to comply, presenting my new method of earthquake prediction using GPS and the response was good, since it was easy to understand.

Since there was nothing around the hotel except taking a taxi to have dinner at some restaurant, nothing enjoyable was available. From the rather quiet atmosphere ruled by the military, the conference was inevitable lackluster. Anyway, the contributions by Myanmar colleagues were much appreciated.

After the conference, together with Professor Armin Gruen from Switzerland and Professor Clive from Australia, we hired a taxi at \$250 to take us to Yangon. On the way we visited Pegu, ancient

city and the reclining Buddha. Lunch was fried rice noodle and quite delicious. In Yangon, Clive booked in at a luxurious hotel near the lake, which was very enjoyable. However, it was not enjoyable to stay in a military country. At 9pm someone knocked on my door and called me out to drink vodka with 3 people even though they knew I normally slept at 9pm, saying that we should celebrate before departing for home the next day. The next morning, I was still hung over but was happy to leave Myanmar, a country full of excitement. This was factual happenings in a part of Asia and as an Asian, to experience this, was a good thing.

40th ACRS was held in Taejon of Korea in 2019. Since Typhoon No19 had just passed, along the seashore several ships were seen to have been swept aground. I could not book the air ticket in time, so I missed the opening ceremony on the first day. In this conference, the Chinese delegation brought up the political problem about the name of Taiwan for consideration, posing some uneasy feelings. In the Olympics the official name of Taiwan is China Taipei but the Chinese said that this name could not be used internationally since Taiwan was not a country, just a region. In the opening speech, I would call the delegate of each country as the national delegate, but this would not be acceptable since this did not include Taiwan and Hong Kong, but they were ordinary members. After negotiations with the Chinese government, finally it was agreed to use the name as “Chinese Taipei”. From this agreement Mr. Fan Zhai of Taiwan was appointed as Deputy

Secretary General, and for good balance Mr. Gu Chinghua of China and Mr. Sameer of India were also appointed as Deputy Secretaries General. This enabled good stability for the Secretariat under Professor Cho Kohei. In the academic world the political intervention is undesirable, but it is an unavoidable problem in Asia. The fact that agreement was achieved to build mutual trust between China and Taiwan for a long time was a very good outcome.

Near the hotel, there was a stream with a nice walkway, so I enjoyed morning walks every day. During the conference, together with Professor Cho, Ms. Fujino, Professor Armin of Switzerland, Professor Bruce of Australia and his wife Jan, and Mr. Oke my previous student from Sweden, we went to enjoy Korean food called “Sapporo”.

The conferences do not just offer the chances to present papers, but also provided the opportunity to meet people. In the past during my younger age, when attending international conferences or going to the party alone, I felt quite lonesome. So, if I met someone who came to the meeting or the party alone, I would go and say hello and talk to him/her. Just a few words might bring us closer together, especially Bhutanese or Myanmar who came alone would receive my special attention.

At the closing ceremony “Contributor Award” was presented to those who had hitherto made contributions to ACRS, totaling

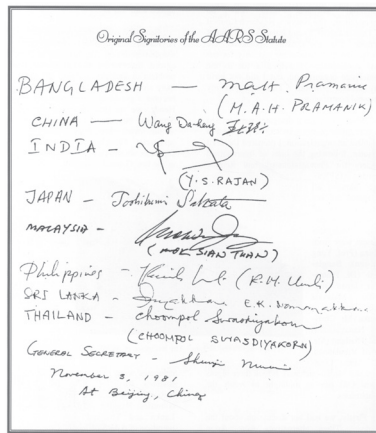
38 people. I handed over the certificates to everyone with words of appreciation. It was not just I who had worked hard, but success came from the support of many people. I was already eighty years old and happy to see many successors. The conference achieved its goals due to the strong determination of my colleague Mr. Kim who was open minded and had a sense of humor, and a senior like me, with a lot of admirers. It is heartening to see such people helping to enrich 40 years of ACRS.

Even though I enjoyed participating in ACRS every year it is regrettable that COVID-19 made it necessary to organize in the form of on-line instead of on-site meeting.



"A warm hand shake"

Prof. Shunji Murai (right) with Mr. Fang Yi, Vice Prime Minister, China (left) and Prof. Wang Daheng, Conference Chairman (centre) at Welcome Party, (People's Great Hall) 2nd ACRS Beijing, China, 1981





Chinese participants of the second ACRS in a group photo session.



Thai participants at 2nd ACRS in Beijing.



The Honorable Minister of Mongolia and Her Royal Highness Princess Sirindhorn of Thailand at the Opening Session with other dignitaries.



Professor Shunji Murai addressing the opening session of the 14th ACRS at Tehran, Islamic Republic of Iran.



The Honourable Datuk Law Hieng Ding, Minister of Science, Technology and the Environment at the Opening Session of the 18th ACRS in Kuala Lumpur.



Mr. Virgilio S. Santos choreographing the opening session of the 19th ACRS in Manila.



Opening Session of the Fifth ACRS



A group of participants at the 4th ACRS received by the Organizing Committee upon arrival at Bandernaike Air Port in Colombo.



Professor Arthur C Clarke discussing with late Mr. Nanayakkara, Surveyor General & Mr. Herut, Deputy Surveyor General during the fourth ACRS.

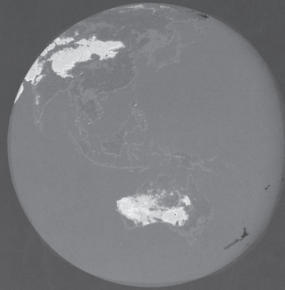


Late Cristopher Nanayakkra assisting H.E. the President in lighting the ceremonial lamp at the opening ceremony.





**Applications of Remote Sensing
in Asia and Oceania**
– Environmental Change Monitoring –



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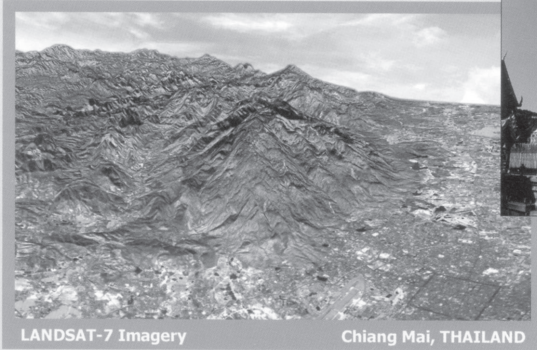
Edited by
Shunji Murai



2nd Announcement
Call for Papers

25th ACRS

Asian Conference on Remote Sensing
22 - 26 November 2004



LANDSAT-7 Imagery

Chiang Mai, THAILAND






DOI SUTHEP

25th ACRS organized by

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-  International Institute for Asian Studies
-  International Institute for Geo-Information Science and Earth Observation (ITC) Netherlands

Supported by Remote Sensing and GIS Association of Thailand

12 ISPRS Congress and Director Period

In 1972 the ISP (International Society for Photogrammetry) Congress was held in Ottawa, Canada. It was my first attendance at such conference as secretary to Professor Maruyasu. I had since been attending subsequent Congresses and in 1992 I was elected as the first Asian ISPRS President of the then ISPRS (International Society for Photogrammetry and Remote Sensing). It can be said that during the period of 20 years, not only I, but also Japan and the whole world were trending towards research being undertaken in academia.

During the 1972 ISP Congress in Ottawa, Professor Maruyasu was elected 2nd Vice President which was a significant achievement for Lecturer Oshima, (later transferred to be Professor of Hosei University). At that time, to be elected 2nd Vice President of ISP implied that the country of that person would propose in 4 years' time to be a candidate to host the next ISP Congress. This meant that Japan should host the Congress in 1980. This was an unwritten customary procedure. However, the oil shock occurred making it difficult to receive financial support from companies. Therefore, at the 1976 Congress in Helsinki Finland, Japan withdrew its candidacy to hold the ISP Congress in 1980, which violated a longstanding ISP tradition. The Germany delegation stated that it would not allow such a situation, which might threaten the existence of ISP. So, immediate negotiations were carried out

with the German government and a budget was allocated for the hosting of the 1980 Congress in Germany. The difficulty in this matter was elaborated by Professor Fritz Ackermann world renown photogrammetrist, during the welcome party on the Congress opening day in Hamburg, Germany with comments criticizing Japan. I was at the party but was not aware of the background, so I felt very ashamed, left the party and went back to my hotel.

During the ISP Congress in Hamburg, Germany in 1980, the name of the Society was changed to ISPRS (International Society for Photogrammetry and Remote Sensing), to demonstrate its positive involvement of the Society in the recently emerged field of remote sensing. In Japan a new Japan Society for Remote Sensing was established by Professor Maruyasu who left JSP. In Europe and the United States there were also such movements, some merged with the existing society. For ISPRS, photogrammetry was integrated with remote sensing. Since JSP remained the official Japanese representative in ISPRS, its name was changed to JSPRS to conform with the ISPRS name. There were diverse movements around the world to incorporate the field of remote sensing.

Professor Nakamura, my senior said to me “I will support you. At the ISPRS Congress in Rio de Janeiro in Brazil in 1984, please propose to host ISPRS in Kyoto in 1988.” It immediately dawned on me the meaning of the fact that in Hamburg Congress

Professor Nakamura had proposed to host the congress in Tokyo in 1984, but was defeated by Brazil, resulting in a lack of trust of Japan by ISPRS. If such conditions persisted, there might be no future for Japan in ISPRS. For me to propose candidature for the 1988 Congress was a major stake for Japanese society.

In the ISPRS General Assembly in Rio de Janeiro in Brazil in 1984, besides Japan, countries proposing to host the congress in 1988 were United States, Australia and India, all were formidable competitors. Speeches for proposing to host the Congress were set at 15 minutes, so I put together the content of my speech in 15 slides, such as “What is the meaning of holding the Congress in Japan of Asia?” “Why it should be Kyoto?”, “What is the result and advantage of holding the Congress in Japan?”, “How is the progress of photogrammetry and remote sensing research and development in Japan?”, “What are lodging and other expenses in Kyoto?” etc. I spoke in English without looking at the memo. The last slide showed a Japanese lady in kimono smiling while saying “Welcome.”

Countries proposing to host the Congress had planned pre-voting parties inviting representatives of voting countries. For the dinner party, the United States and Australia had already decided to hold such an event, and invitation cards had been distributed. With no choice, I arranged a lunch party during the meeting at an Italian restaurant by providing a big bus for

the transportation between the Congress venue and the restaurant. Towards the end of the lunch party, Dr. Fred Doyle of United States who was ISPRS President at that time, even though United States was also the candidate, said to representatives of each country that “I support Japan”. Fred was my mentor and also my teacher who taught me how to build up leadership in the world.

The result of voting showed Japan beating strong competitors like United States and Australia. I became Congress Director leading up to the next Congress and one of six members of the ISPRS Council.

The Congress had been assigned to Japan, but fund-raising opportunities had not been determined. The quotations from professional event organizers of international meetings were very high, and beyond our ability to accept. We therefore decided to organize the event ourselves, by requesting cooperation from professors and students of several universities. The most important helpers were Professor Sakata and Professor Shimoda of Tokai University. Of course, staff and students of the Murai Lab joined the volunteers in planning and drafting the program, the commercial exhibition, entertainment activities and study tours, which were all organized by ourselves. Mr. Ueda, director of Kyoto International Convention Center, the venue of the Congress kindly advised how to limit expenses and provided

valuable information about the management of international meetings. I take this opportunity to thank him sincerely.

For fund raising, I went with Professor Nakamura to see top management of related commercial companies and requested donations. The Ministry of Finance allowed us to receive tax exempt donations up to a maximum amount of 30 million yen. Even so we were several tens of millions of yen short. The most expensive item at the Congress was simultaneous interpretations into 3 languages, i.e. English, German and French. The quotation from the companies providing such services was almost 100 million yen. Fortunately, I met an Australian who worked in simultaneous interpretation for ISPRS in foreign countries. His quotation for the Kyoto Congress was 20 million yen, only about 20% of the price of Japanese companies, and this included travelling and hotel expenses. With this contract in place, the fundraising was achieved.

At that time, registrations, receipt of registration fees, management of income and expenditure, receipt of papers, handling of events etc. and all the office work, were done in analog form. However, we received cooperation from professors and staff of Murai Lab plus Sakata Lab and Shimoda Lab of Tokai University, including the students, to develop computer programs and testing for digital format. Normally, international meetings would be entrusted to the companies called international meeting

organizers, but their charges were very high and not affordable.

The commercial exhibition was expected to be the highest source of income, but it did not progress as we had hoped. However, towards the Congress commencement, a company related to remote sensing from France booked a large exhibition space, thus eliminating our concerns about fund raising, which was an unforgettable occurrence. I planned the entertainment events in a stingy Japanese style. I happened to know a neighbor who was the head of a drum beating group in Hachioji. I asked him to come on the 2nd day of the Congress with his group of 23 people to show off Japanese drum beating. It was in early July, still in the rainy season, so rain was a worry but luckily the weather was fine. The drum beating was shown outdoors in the open space and received a big applause and was greatly appreciated by many foreign participants. All the expenses including travel from Tokyo, remuneration, equipment, transport expenses, and lodging amounted to only 500,000 yen.

The 10-day Congress was held from July 1 to 10. I chose this period even though it was still in the rainy season because it was the period of cheapest rent at meeting venues and hotels. Professor Nakamura who was born in Kyoto said that “Murai, why do you plan to hold the congress in the rainy season?” It was amazing that during these 10 days the weather was fine except for the last day which was cloudy. Every morning I would go to the shrine

near Takaraga Lake close to the meeting venue and pray enthusiastically “Please give us good weather for today and tomorrow” and dropped a newly circulated 500-yen coin in the donation box. It seemed that my earnest praying was answered.

Of most concern was how many foreign participants would arrive, but it turned out that there were more than 2,800 people, many more than I had expected. We found out that among participants from Europe and America, many had come to Japan for the first time. There were 800 Japanese participants, which was probably because of the good reputation of Kyoto. Taeko, my wife took the wives of ISPRS Council, who had previously met at ISPRS Congresses, to join a study tour of Kyoto, including Koto musical instruments and other Japanese culture. Japan was quite safe and clean, and the temples and shrines in Kyoto are especially exquisite. In Europe or United States, opening ceremonies were accompanied by violin or piano music but I showed Shakuhachi (bamboo clarinet) and Koto (Japanese harp).

My wife Taeko organized Obara style Ikebana flower arrangement for wives of foreign participants. Great interest was shown by the husbands of the wives who made their own flower arrangements. Bon odori dressed in bathing suits were also shown. Academic presentations were well attended and were considered successful. Wives of the participants were also

invited to visit Japanese houses which was well received. If the wives of the participants were happy, it was deemed that the conference had been successful, which indeed was what Mr. Ueda of Kyoto International Convention Center said. Therefore, it can be said that ISPRS in Kyoto was a success. After final accounting, it was found out that there was a profit of 50 million yen which became an important source of funding for the management of future JSP activities.

At the General Assembly during ISPRS Congress, I was asked to be Secretary General of ISPRS which I accepted. I was 48 years old at that time and had to be responsible for very strict office work in a western system for four consecutive years. Secretary General is the position next to President, not the Vice President, and consequently was tasked with the management of ISPRS, e.g. scheduling and procedures of activities, including office work such as correspondence with members. When Dr. Kennert Torlegard of Sweden handed over the responsibility to me, I was surprised to see more than 20 volumes of neatly arranged files and had to request the cooperation of Ms. Fujino, my secretary, to carry out the work. Experiences gained in the difficult task of the Secretary General were very useful for my later research management. Moreover, this assisted me in the management of various ISPRS technical commissions. The task of Secretary General was a very difficult time for me. At that time, there was no e-mail, foreign correspondence had to be by paper and mail.

Letters sent annually amounted to about 300, averaging one per day. My quick office management is now the result of this 4-years' experience.

Having the experience of Secretary General, I gradually learned about the small details of ISPRS. If the Statutes and Bylaws were not constantly consulted, the correct answer to questions about the operations of ISPRS could not be given. The handling of international matters must always be based on adherence to the Statutes and Bylaws. I had to regularly consult with the President for mutual consent and had to coordinate with other Council members and Chairmen of Technical Commissions all the time.

After the hard work of 4 years as Secretary General had almost come to an end, in early 1992 there was a meeting of the ISPRS Council. At the meeting former president, Professor Gottfried Konecny proposed to me that "Shunji, please accept the next presidency". I was surprised since I was just relieved from the busy work of Secretary General. Of course, according to the customs, President must be elected by the General Assembly, but in actual practice, this would be approved as proposed by the Council without balloting. Other Council members also proposed my name after evaluating the success of Kyoto Congress and smooth handling of office work as Secretary General.

At the ISPRS Congress in Washington, D.C. in 1992, the ISPRS General Assembly of ISPRS elected me as the first ISPRS President from Asia. I was 52 years old at the time. On the stage, I was presented with the President's gold chain on my shoulders which was magnificent and heavy (see the picture on the front cover). At the Rome Olympics we were defeated in the preliminary round and hence did not deserve a gold medal. At that moment I decided to win a gold medal in another field. So, I was overjoyed when this was realized 32 years after the Olympics.

The most important activity during my presidency was the forward-looking strategy planning meeting. I thought about what had made western people become world leaders for several centuries. From this meeting I learned that the answer was the building of strategies and world leading systems. Japanese people used only tactical methods but no strategies. As is often said, a tactical method was the technique used by a person to win over an opponent, whereas a strategy was the planning of fighting to achieve ultimate victory for a nation, even though many people had to be sacrificed. The outcome of the strategy was victory. In this meeting, the Council together with a facilitator Professor Konecny, former ISPRS President were tasked with developing the strategy. The meeting took 3 days at a quiet location outside Washington D.C. The first day was spent in reviewing the mission of the organization, that is, to improve the mission statement written in the Statutes and Bylaws of

the Society, which should be modified to comply with the change of time and technology. The first day was used in the discussion of opinions presented by the six Council members. Everybody had to give their own opinions and if there was disagreement with these opinions the facilitator would arrange a suitable debate. If the different opinions still persisted, voting was used to decide on the issue. On the following day, the modified mission was used to define about 8 topics which should be discussed further. Everybody must defend each topic that was considered important. There was no room for taking control of an argument and this was called positive participation, being the duty of all the Council. After lengthy debate, the topics were summarized to just over ten. After that, priorities of each topic were decided by voting. Only eight highest priority topics were selected. During voting, each Director had to sign his own sheet. The last day was used to plan and set up the procedures of operations of the selected topics. From the participation in the strategy meeting this time I realized why western society had become the world leader. At the same time, I was aware that no strategies had been developed by Japanese people. The strategy meeting, therefore, was the biggest learning experience from my involvement on the Council of ISPRS for many years.

The most important memory during my tenure as President was the 1996 ISPRS Congress held at Hapsburg Palace in Vienna, Austria. At the opening ceremony, while wearing the ISPRS gold

chain I made a speech, walked with Taeko my wife on the red carpet from the lobby up staircase to the meeting room and we were invited to sit in the front row. After my speech, Dr. Frederic Doyle, from the United States, former President, said to me that “Shunji, well done” and he also spoke warmly to Taeko. Hearing the compliments from my mentor, Fred Doyle, gave me the feeling that all the past arduous work had been worthwhile, I was 57 at that time.

After the Presidency, I assumed the position of 1st Vice President, in the capacity of advisor. At the Amsterdam Congress in Netherland in 2000, I was elected Honorary Member. The number of ISPRS Honorary Members is limited to no more than 7 living individuals.

Then, together with my close friend who had assisted me as the 2nd Vice President when I was President of ISPRS, i.e., Professor Armin Gruen, called on those senior people who had been active in ISPRS to set up White Elephant Club (WEC) and join in a party at every Congress. Moreover, at each ACRS, in cooperation with Professor Armin Gruen was the provision of training workshops, called WEC sessions, on thesis writing, how to present papers in the conference and how to apply for research grants.

It was through the blessing of two mentors that I could be active in ISPRS. As mentioned before, they were Dr. Fred Doyle of

the United States and Professor Gottfried Konecny of Germany. From Fred I was taught what are the characteristics of a good leader. He taught me that leaders are those who can make difficult decisions. And Gottfried Konecny taught me that only ‘elephants’ (meaning people who work positively) can build an organization.





Shunji Mural and Karl Kraus at the Reception by the Mayor of Vienna in the Town Hall



13 My Model for Post-retirement Activities

On March 31, 2000 I retired from the position of Professor of Todai. I was 60 years old and had been working at IIS of Todai since 1966, a total of 34 years. Normally after retirement some people would consider finding a new job or just remain idle. But I did not have time to think about that. At the time, I was 1st Vice President of ISPRS and must prepare for the coming Congress in July 2000 and I had to make inspections of facilities in Spain and Turkey, personnel of which were proposing to host the ISPRS Congress in 2004, and my itinerary included travel to attend an ISPRS Council meeting in Hungary, which was just one day after my retirement on April 1. Most Todai professors after retirement would become professors of private universities to give lectures, but I did not want to become such a professor. Before retirement I was invited to be advisor of Kokusai Kogyo Co.Ltd. dealing in photogrammetry. Income from this posed no problem for my living expenses. After returning from the overseas trip, several companies phoned me asking “Professor, if you have some time, please come to be our advisor.” The job of the advisor was the development of future desirable technology for the company and the development of products by mutual consultation with the young staff of the company once a month, which was what I wanted to do. Therefore, I accepted the offers, resulting in a monthly income that was more than my salary before retirement.

Consultation with the companies where I was the advisor mostly centered on the consideration of new technology development and therefore was interesting. After consultation, together with the staff, we went to have a drinking party, American share style. During the party I could get to know the real characteristics of the staff, which was important. There were many cases whereby knowledge derived from the consultation led to the application of patents. As such, good evaluation was received from the companies leading to my long continuous relationship as an advisor. Besides keeping commercial matters confidential, other information was quite free for me to receive.

In July 2000 ISPRS Congress was convened in Amsterdam in the Netherlands. Professor Klaas Beek (deceased) was the Congress Director. He was Rector of ITC (education institute for students from developing countries) and my close friend. After my term as ISPRS President was completed, he proposed that I should become an honorary member of ITC. At this juncture, I had served ISPRS smoothly as a director for 16 years. At the general meeting of the Congress, I was proposed and elected as honorary member of ISPRS. At that time, my close friend, Professor Armin Gruen who was a Professor at ETH Zurich, Switzerland proposed for me to receive an honorary doctorate degree at ETH and I duly accepted. In the past, only one other person had been chosen for an honorary doctorate in the field of Professor Gruen during a span of 50 to 100 years. ETH was one of a few European

universities which produced more than 30 Nobel laureates. Armin Gruen asked me and Taeko my wife, to dress Haori (Japanese tuxedo) and Hakama (Japanese trousers/skirts) at the ceremony which was my first experience. The above two rewards were bestowed to those having widely accredited contribution in the development of remote sensing technology centered on advanced countries in Europe and United States and including Asia. I was very happy to be the first ISPRS from Asia with high appraisal of my achievement.

I was Congress Director, Secretary General, President and 1st Vice President of ISPRS for a span of 16 years. It had been a hard job but I also gain a huge amount of experience, especially in the context of working style and the way of thinking of western society centered around Europe and United States. Western society would debate logically and in detail and decide on the best solution without consideration of social status or position. Everybody gives their opinion openly. If no conclusion is drawn, voting is used to decide on the issue. This is the starting point of democracy. Japanese people should learn accordingly.

In 2002 when I was 62 years old, i.e., two years after retirement, a major event occurred which had a great bearing on my life after retirement. Dr. Araki Harumi, Executive Director of Asahi Aerial Marine Co.Ltd. said that GPS could probably be used to predict earthquakes and asked me to join him in doing

research on this topic. I hesitated at first because earthquakes were not my line of expertise, but GPS was within my expertise, so I accepted the invitation. Details about the research on earthquake prediction will be described in Chapter 14.

My retirement allowance of 40 million yen was spent unexpectedly. During the period of bringing up my two sons, instead of telling them to study hard, I took the policy of enabling them to enjoy themselves as they liked in the mountains, along the river or seashore. When we stayed at the hotel, my little devil of sons would run around the lobby and often broke glass cups while eating. We used to rent some resorts, but they were expensive and not comfortable. So, after retirement our dream was to buy a resort house for the children to run around the house freely. Our sons were grown up, but we would like to provide running space for our grandchildren. From the introduction of our acquaintance, we went to look around resort houses in Karuizawa. Why Karuizawa? When we went to stay at the resort, our daughters-in-law did not like to prepare food or do house chores; they preferred to have food served at a hotel. After talking to Taeko, she said that if it was Karuizawa, a popular place for women, daughters-in-law should come to spend time here. A real estate agent took us to see 5 or 6 ready-built resort houses, one of them was situated on a small hill painted in pink and looked stylish. The agent happened to forget to bring the key, so we did not enter to see the inside. Previously I had a co-own resort

house with my friends, but there were many trees around the house, so I knew the weak point of resort houses was moisture. Trees were important but not too many. The house we saw was situated on a small hill so there should be no problem with moisture. We decided to buy the house on the spot, without seeing inside. Later our eldest son Kenji complained that it was not prudent to buy an expensive house without seeing the inside. The price of the house was the same amount as my retirement allowance, i.e., 40 million yen.

It was later known that this house was built one year ago but the owner did not move in and had to sell it because his company went bankrupt. It looked like a new house. My grandson, the son of my eldest son, was sick with asthma while still a baby. So, in summer, my daughter-in-law Mihoko took him to receive fresh air at the resort house. Kakeru, my grandson recovered from asthma as he grew up. Therefore, purchasing the resort was a rewarding investment. At present the occupancy rate is very high. Most people like it. Recently a heater was installed to make it comfortable even in winter. Since it was not my style to keep the retirement allowance for spending in old age, this was a good way of using the money.

Upon retirement, Taeko said that she would like to travel with a backpack to Hokkaido. When she was studying at school, she joined the “Wonderful Girl” group, so she would like to

enjoy a walking tour in Hokkaido. We rented bicycles and rode to Sarobetsu Marshland Flower Garden and walked in the marshland. We took the ferry to Rebunjima and had a view from Soyamisaki Observatory. It was very beautiful scenery around with high cliffs and beautiful sea, giving the feeling that we had indeed come to Hokkaido. Taeko was very happy and said she would like to see the Okhotsk Sea, so we went to see it along the seashore, while the weather was rainy. Here it was windy and the sea was turbulent. Sometimes losing our way, we walked for nearly three and a half hours. Then we returned by bus and train to Asahikawa and went to Biei to stay without a prior booking. We rented bicycles hoping to visit Patchwork Hill. Taeko rented a battery driven bicycle, whereas I was stingy and rented a manual one. The scenery was magnificent, but it was a hard bicycle ride. On the last day we visited Tomita Farm Flower Garden, etc. and then returned to Tokyo. The total trip expense was 400,000 yen, which was not considered expensive.

The Hokkaido trip was almost one weeklong. I felt like I had shown my gratitude to Taeko. She had always been supporting me in my working as ISPRS Council member. Taeko acted in accordance with western customs, whereby in principle the wife must accompany the husband to mix with wives of other directors, with broken English. Almost every Japanese wife would sneak away but Taeko did not. I could not fathom how much Taeko had contributed in her supporting role and I would like to thank her.

Taeko became good friends of wives of directors and is still in good contact, which is very heartening. We had good memories of several couples staying at our house such as, Gottfried and Liselotte of Germany, Armin and Gudrun of Switzerland, George and Jadwiga of Canada, Lawrence and Evelyn of United States, and Ian and Jan of England.

After retirement, everybody may want to think about saving to prepare for old age. We, husband and wife, also discussed this. Since the interest rate of banks almost came down to zero, we must forget the income from the interest. I then made two daring investments.

The first was the investment in stocks. Our house was near Mejirodai Station of Keio Railway Line, so we bought stock of Keio Co. which gave the annual free pass. Since I still had to go to work in Tokyo, this amounted to less burden on train commuting expenses and was much better than the interest from the bank. It was later found out that the dividend was quite significant. Taeko was disgusted with her stupidity in depositing the money in the bank, so she would like to invest in stock market with me. I watched for good timing and each of us invested 10 million yen in the stock of Keio Railway Co. At present, the price of Keio Railway Co. Stock has increased almost three-fold. I did not consult with investment staff of trust companies, since mostly they said something irresponsible. I just went to the trust

company and asked to buy the stock of this company for such and such number of stocks at the quotation price. It was the same way when I sold off the stocks, based all on my own decisions. The result was that in all, we earned a profit of several ten million yen. But there was no need for me to earn more money, I stopped investment in the stock market, since I knew that if one stumbled, a large loss would be unavoidable. The dividend from the existing stocks is about one million yen and I am quite satisfied with that.

When I buy or sell stocks or other properties, I make the decision on the spot. Not only in Japan, but this same decision making applies when I have travelled all over the world, including advanced countries to developing countries. I had seen and heard a lot about the real situation of an area which was very useful. I had visited big countries, be it United States, Canada, Russia, China, India, Australia, Brazil several times and had many friends. At the same time, I also visited developing countries like Bhutan, Nepal, Myanmar, Bangladesh, Sri Lanka. In Africa I used to stay in underdeveloped village in Ghana where unmarried women lived half-naked. I also had experience in countries in South America like Peru and Argentine where inflation was very high at about 100% per annum, and the exchange rate with U.S.dollar changed everyday. One thousand yen could fetch six digits of local currency. I met people of Masai tribe of Kenya and visited on safari. I sat shaking back and forth on an elephant's back in Assam of India. I saw

Rhino on safari and tigers in the forest. Having such experience was useful in the quick decision making of the problems which came from my over 300 overseas trips in about 60 countries around the world. What I thought as important was the animal instinct for survival at a critical time. Plants and animals in nature are living in the most optimal way under the given environment. The natural environment is the best solution. Therefore, I tried to let my sons be in touch with nature as much as possible. I also like to spend as much time as possible in the natural environment.

The second of my investments was in solar energy. Mr. Murasawa Yoshihisa (former Special Professor of Todai), a junior of the rowing club of Todai talked to me about this, saying that the profit was 20% per annum but the investment was high, one unit was 20 million yen, with the return of principle in 20 years. Most people would consider this to be a scam and would not invest. But I believed that sports club junior would not deceive me, so I invested together with Taeko, who supported solar energy and used to protest against nuclear power promotion by the Japanese government. European and United States friends said that “Aren’t Japanese people stupid, atomic bomb was dropped in Hiroshima, Japan’s great eastern earthquake gave rise to nuclear reaction in Fukushima nuclear power plant. Even facing such incidents, Japan still depends on nuclear power. This is unbelievable”. It was indeed true. Solar power energy production needs almost no raw material, so it is no burden on the environment.

We withdrew the deposit and invested in solar power energy together. During the period of 20 years, every month one million yen principal and interest was returned to us. The total interest was 20%. Mr. Murasawa said that no matter how much he tried, besides us, nobody invested in solar energy. Mr. Murasawa was the advisor of a solar energy production company and used to introduce me to CEO of his company. This became a magnet of preparation for our old age.

Recently, Ms Koike, Mayor of Tokyo decided to enforce the law on using solar electricity in newly built houses, which was commendable. We should look at the examples in Europe, especially in Germany where there are promotions by state and private sector to use solar energy for electricity. Recently I visited China and found out that all motorcycles use batteries, no exhaust gas was emitted, and therefore is more advanced than Japan.

Development of environmentally friendly electric cars in Japan was behind United States, China and Korea, and this is deplorable for the Japanese car industry, and Japan may be left behind in the future. In fact, in Thailand, Toyota was the most popular car purchased, but now the Chinese electric cars are more popular than Toyota hybrid cars. I used to experience Chinese electric cars in Bangkok and felt comfortable. There are parking areas and automatic charging stations. While driving on the road, if the car comes within 1 meter of another car, a sensor will

sound. As a Japanese person, I am concerned that in future Japan may no longer be an advanced industrial country and will have to be content with being a tourism dependent country with cheap prices, and clean and safe environment. The first time I went to Europe I had the feeling that the countries were so beautiful. However, at present, foreign tourists will say that Japan has beautiful nature, and the food is so marvelous. If I were to give credit marks to various countries, from my experience in foreign countries, Japanese politeness is number one in the world, so I would like to see the younger generations carry on this uniqueness. There was news about Japanese football fans collecting trash after the game which excited everybody around the world. This spirit must not be lost. Beautiful nature, clean cities, safe potable tap water, non-polluted air, reliable fruit and vegetables without contamination or insecticide, these are Japan's assets.

Money is necessary to avoid financial difficulty in old age, so that one is happy even as one gets old. But the more important aspect is spiritual contentment and sufficiency to be able to live happily with the family, be among good friends and kind people. The family is especially important, so there should be good relations with children and grandchildren, and to help each other. As for my wife and me, as mentioned before I struggled with an inheritance issue, resulting in cold relationships with some of my family, but this should be avoided. I built up good family relationships with my two daughters-in-law and my grandchildren.

The children of my in-laws also contact each other, even at gatherings such as weddings, funerals or festivals. The good relations commenced from a get together of family and relatives. Every year on the 30th of December I hold sticky rice cake pounding party at my house with about 25 relatives participating, after which we enjoy eating the moti cakes together. The gift from me for the grandchildren as the most senior person, was coins, being the small change I had accumulated during the whole year. The sequence of selection was decided by a toss of a coin. With eyes closed, their right hand was used to grasp as many coins as possible. Each grandchild would get 5,000 to 8,000 yen. It was a very joyful event, after which we played football in a nearby garden. Even though we live just as husband and wife, we do not feel lonely.

Before retirement there had been activities at Japan Survey Association with strong relations. In 1979 I was instructed to be director of the Association when I was Associate Professor. Before that, the world had entered the digital era. Even in Japan, practical use of digital techniques was also booming, including in the academies. In the world the original name of ‘surveying’ was changed to ‘geoinformatics’ or ‘geomatics’, to reflect the move into the use of digital technologies. As I was involved in international activities, I thought that Japan should go digital as soon as possible. In any era, there are people who stick with the original technology and Japan was no exception. I thought we should not be left

behind. Therefore, in 1995 I published an eye-opening book entitled “World of Geoinformatics: Message to Top Managers” printed by Japan Survey Association, which became one of the best sellers.

One year before my retirement, i.e., in 1999 I published a textbook on surveying entitled “Spatial Informatics” also printed by Japan Survey Association. Several universities used it to replace their old surveying textbooks. The word “geoinformatics” was coined by Professor Shibasaki Ryosuke my former student and Professor Shimizu Eihan a former student of Professor Nakamura Hideo.

During that period, contacts were made with managers of the three map printing companies which whom I had good working relations. Sometimes we had lunch or dinner together and exchanged ideas and information. Managers were Mr. Ando of Naigai Chizu Co., Mr. Tanaka of Chuo Chizu Co. and Mr. Midorikawa of Midorikawa Co. I proposed to the three managers as the top of this sector of the industry, that they should plan to enter the digital era. For Mr. Ando, his analog maps in stores around Ochanomizu was selling well, so the answer was “Wait and see.” The former manager Mr. Tanaka said that if the digital era had arrived, he would stand back and let his son take over to develop into the digital era, whereas the manager of Midorikawa Co. replied that “Color map printing required original analog printing machine

by technician”, so he did not want to enter digital era. The young Tanaka, as manager of his father’s company, Chuo Chizu agreed with my proposal and imported expensive color digital printing machines at that time and started to train his technicians who were used to analog equipment. He also said that the company’s name should be changed to be in line with digital era and sought my opinion. I told him the new name could be “Chuo Geoinformatics Co.” and presented a talk about the future map printing industry to the staff of the company. Mr. Tanaka the manager, not only engaged in digital map printing, but also introduced GIS as a new line of business for his company. The former manager was quite concerned about the investment but listened to my advice. Now, what was the fate of these three companies? Midorikawa Co. which stuck to analog technology went bankrupt, Naigai Chizu Co. which had a maps sales department somehow survived, whereas Chuo Geoinformatics with good performance of GIS department, was lively and doing well.

At the time I was professor in Todai, I was asked to be the chief editor of the journal. The main income of the Association was from the ordinary member subscriptions of the monthly journal “Sokuryo”. At the time I was the chief editor, the number of ordinary members almost dropped below 5000. The Association was then under the supervision of Ministry of Public Works (at present Ministry of Land and Transportation) and centered around almost 40 former officials from the ministry. The President and

Chief Editor alternated between former official and a university professor every two or four years. I did not enjoy reading the monthly journal “Sokuryo” which was full of serious technical surveying matters, so ordinary people said that it was a journal for officials.

I quarreled at times with the editorial staff comprising the former officials and decided to improve the journal “Sokuryo” on a big scale. Put simply, I changed the journal from a scientific and technological journal to a journal for the general public. Of course, contents related to science and technology of surveying remained more than half of the content, but my idea was to interview famous people or popular celebrities. At the end of interview, I would ask “Well, do you like surveying?” and waited for the answer. It was 30-minute interviews without being previous arranged, with a contract of 300,000 to 500,000 yen remuneration. The answers received were something like “Surveying is great”, “It is worth working as it plays the role of advance guard of national land construction.” Especially, in case of women, the answer was something like “Surveying is manly.” Since I wanted to increase the number of woman members, I interviewed men and women in equal numbers. I also interviewed foreign people. I conducted a special interview with HRH Princess Sirindhorn’s during her visit to Japan. Besides there were Mr. Horie Ken-ichi, who singly crossed Pacific Ocean by yacht, Ms. Koshino Junko, apparel designer, Mr. Komatsu Sakyo author of “Sinking

Japan” etc., a total of 30 interviews.

These interviews were printed in color. Suddenly the journal became popular, and purchases by ordinary members increased rapidly, from 5,000 to 13,000. The annual subscription fee was 5,000 yen, and with member increase of 8,000, meaning an income increase of 40 million yen. After deducting the interview fees of 500,000 yen per person totaling 15 million yen, the increased in income was still 25 million yen. It was rumored that those coming from government officials complained about high interview fees, but later on they went quiet. It was a blessing that women members increased. Later when I became President of the Association, I set up a “Lady Surveyor club.”

Five years after retirement, in Heisei 17 (2006) I became Vice President and two years later in Heisei 19 (2008) I became President and continued as President for four terms totaling eight years, Normally the term of President was two terms for four years, alternately between the former director general of National Land Institute and university professor, but I continued for the 4 terms. During my term as President, due to government structural reform, the name and organization was changed to Japan Survey Association. The Board of Directors was also significantly reformed, with the inclusion of managers from regional survey companies who became more active. I dare to explain that this was through repeated logical and democratic discussions. I learned from ISPRS

where a logical proposal was presented and cleanly adopted, according to the so-called principles of logical thinking.

During my tenure as Presidency, two successful projects were implemented. The first was the digital photogrammetry workshops organized in different cities, from the north in Hokkaido to the south of Kagoshima. A total of about 1000 people received training in digital photogrammetry techniques. I lectured on principles of photogrammetry, Mr. Otani Hitoshi of Topcon used computer software for practical training, Mr. Tsuzura carried out office procedures and acted as training assistant. Digital photogrammetry is my professional technology. At the workshop about 20 workshop trainees were told to bring their own digital cameras to take stereo photos of the stone wall of castles in Kumamoto or Sendai and make 3 dimensional maps of the stone wall of the castle. The workshop was held several times in a year in Sendai, Mito, Osaka, Hiroshima, Kagoshima etc. for several years, totaling almost 50 times. The Topcon Company brought along software which they had developed and participants could make measurements from their digital images. Workshop participants could purchase the software at a special discount price.

After the workshop, participants were happy to have a lively conversation at a closing party at a nearby drinking restaurant with Mr.Otani and Mr. Tsuzura. Even now three of us

hold get-together lunches or dinners every three months. They are truly dear colleagues.

The second project was high level seminar. This was the idea of former general manager, the late Mr. Takeda Hiroyuki, to gather managers or directors of regional survey companies for the workshop on how to set up strategies, mission statement preparation with me as lecturer. I learned through the meetings of directors of ISPRS that the weakest point of Japanese culture was the lack of strategies, so I wanted to instruct managers on how to develop strategies. When we look at the articles of association of Japanese companies, only the aims of the businesses are written, but not the missions. This is the biggest difference from European or American companies or organizations, and it is a defect in the management of Japanese companies.

The workshops which were intended for about 10 managers were implemented for more than 10 years. In the beginning the managers were asked to prepare the mission statement of their own company and how to implement such mission statement to fruition, then make a presentation to everybody. I acted as moderator and asked everybody to discuss and improve the mission statements. The managers spoke well of this exercise that through the workshop the direction of their own company became clear in the mission statement and they could look forward to their aims for the future. Even after my

retirement from Japan Survey Association I still have parties with some of the old managers to strengthen our relationship and it is good to remember them.

As President of Japan Survey Association, the important job was the interface with the National Land Institute of the Ministry of National Land Transport, the supervising authority. The most important job was personnel matters involving the reemployment of government officials, Old Boys who reached mandatory retirement age, to management positions of the association. This is called Amakudari (coming down from the sky) personnel affairs. No.1 source of income was the certification of surveying equipment. In legal terms, surveying equipment used in the surveying of all government undertakings must pass the certification process. Contract undertakings related to the National Geographical Institute were also important and constituted a source of income. Then one more important thing was the management of the technical committee concerned with legal regulation on surveying techniques and revisions or establishment of new regulations or standards. There was also the responsibility of editorship of the monthly journal “Sokuryo”. It was not possible to entrust all matters to the President. Practically the General Manger took all the work assignments. When I was President, the late Mr. Takeda Hiroyuki, who was former secretary general brought in Mr. Ono Kunihiko from Chuo Map Co. Ltd to be Secretary General. Normally if the President was

an academic, the Secretary General would be a person from National Geographical Institute. Since I was close to Mr. Ono, our combination was convenient for the reform of the Association.

No.1 achievement was probably the inauguration of the overall supervision of the technicians for spatial information, who would receive the same qualifications as a surveyor. Technicians undertaking contract work for the government were required to have these qualifications. Some surveying companies even significantly increased the salary of those who obtained such qualifications. At the beginning I prepared examination problems and also acted as examiner.

My No.2 achievement was changing the name of the exhibition from National Survey Technology Design System Exhibition to Geo-spatial Information Forum, an innovation of its scale and events. The number of product exhibition companies and participants increased two-fold. At present it is one of the big events for the Association. As President, the popular event was the welcome party organized for every new year. The first speech at the party was by the President of National Land Geographical Institute, the supervising government agency, but this was a greetings message drafted by the office secretary, and not very interesting. For me, I gave a speech ad lib, smiling and interspersed with jokes and briefly publicized the work targets. Since the targets would be realized, some staff even took memos of what I said.

14 Commencement of Earthquake Prediction

Research and formation of Japan

Earthquake Science Exploration Agency (JESEA)

As mentioned earlier, since 2002 when I was 62 years old, and two years after my retirement from Todai, I was invited by Mr. Araki Harumi to start earthquake prediction using GPS. At that time, real applications of GPS had just started, and the accuracy was not as good as at present, but it was adequate for earthquake prediction. Mr. Araki had developed a method for the prediction of earthquakes based on abnormal rates of change of distances between two GPS locations.

I also did trial and error experiments using Mr. Araki's prediction method. One year later i.e., in September 26 2003, a large M8.0 scale earthquake occurred on the shores of Tokachi in Hokkaido with major impacts on the transportation network. Oil storage tanks at the location received lengthy vibrations and finally were destroyed, resulting in oil spills into the sea.

I hurriedly checked past GPS data and found that there was clear prior phenomenon to this earthquake. Suddenly I had confidence that GPS data could be used in earthquake prediction. Immediately a patent application came to my mind. While receiving instructions from Mr. Kimura who had the responsibility for the patent section of a private company, I prepared detailed

documents and drawings, included in the application form entitled “Earthquake, Volcano Eruption Prediction.” and submitted the application to the Patent Agency. I already thought that volcano eruption prediction was the same kind of phenomenon as earthquake. Without relying on the patent attorney, a layman like me even though I had had some instruction from Mr. Kimura, I was quite bold to submit a patent application, but soon the application was rejected. Mr. Kimura was told that at least one rejection was likely, so I made some revisions and replied but I received a second rejection. Since I had made some accusations in my earlier reply, this time I made corrections politely. However, I was surprised that I received a third rejection. It seemed that the inspection official was an earthquake expert with no detailed scientific knowledge of GPS itself. After discussion with Mr. Kimura, I was told that it would be better to be humble and make necessary corrections, but I did not want to adopt a servile attitude. Since I considered that the patent was a system for promoting the progress of science and technology and a useful application thereof, to be rejected on small matters was not acceptable. So, I disputed the ruling and was ready to appeal to the courts. But several months later the patent certification was received, dated December 20, 2005. My arguments for acceptance of the patent had been recognized.

I took it for granted that once a patent had been obtained, the world would recognize it, and it would be applied in real

situations. But the patent's recognition was not so straightforward. The response from private companies was not as expected. Not knowing what to do, I talked to Mr. Maehara, a former student of Murai lab who was Divisional Director at Tokyo Electric Co, to see if Tokyo Electric would be interested to use the patent. However, he told me "Sensei, only the patent was approved, this cannot be believed immediately. But since you propose it, we will set up a three-year project to study and check the validity of this patent with past earthquakes". Thus, a three-year research project was carried out under my guidance at the subsidiary company of Tokyo Electric Co. which specialized in information processing. Around one hundred past earthquakes with larger than Richter Scale M6 selected and immense validity operations were carried out. Tokyo Electric Co. promised that if an earthquake larger than magnitude 6 could be predicted within one month, and within 100 kilometers of its location, then this patent would be used. However, the result of the validity check could not satisfy the requirement of "within one month." The most significant outcome of this validity study was a clear recognition of prior phenomenon to earthquakes, even though the timing accuracy was poor. This was a big step forward in the path to practical earthquake prediction once the accuracy of time could be improved.

After retirement I did not have a permanent job but was still quite busy. As consultant of several companies, I participated

in a monthly half day technical development study group at each location. Besides being the chief editor of “Sokuryo” of Japan Survey Association, I had to go to Shonan campus at Fujisawa once every week as an invited professor at Keio University to guide masters and doctoral thesis students. In 2009 at the age of 70, I joined the senior training and rowing racing of Todai twice a week. I also showed up at various committee meetings, so there was something to do everyday.

After the end of the validity study of Tokyo Electric Co. earthquake prediction using GPS, no accurate predictions had been achieved, but I cooperated with no remuneration as a technical consultant of operations concerning crustal movement analysis using GPS as business, of a subsidiary company of Shimizu Construction Co. The derived benefit was the knowledge applicable to earthquake prediction. Time passed by and several years later in January 2011, a technician from the company requested me to check an abnormal variation in GPS data, and whether it was an error or just noise. I investigated and validated that it was neither an error nor noise. About 5 weeks after the occurrence of this abnormality, the East Japan Great Earthquake occurred. On the morning of that day, there was senior rowing crew training. Since I had a private errand, I did not stay to have lunch together with the rowers, but returned home, which was lucky. Other colleagues were on the way home when the earthquake struck and were delayed on their way, some

spending 8 hours before reaching home. I shouted at Taeko, my wife who was frightened by the strong shaking “Go outside” and take shelter. Takao said that our granddaughter Juli was at the kindergarten at Takao, so after the earthquake was over, we went by car to bring her home. Juli was sitting in the shelter with other children in the playground of the kindergarten.

After calming down I recalled the occurrence of the abnormal GPS data discussed earlier. I became aware that this abnormality was surely the prior phenomenon. I was annoyed that if the information about the abnormality in GPS data prior to the phenomenon of the great earthquake had been sent to people as a warning, many lives could have been saved. I was full of regret that as a scientist while knowing about the abnormality I did not say “It is abnormal, look out for a big earthquake.” Following the great earthquake a massive tsunami occurred resulting in more than 20,000 lives lost. If I had issued a warning, it was not certain that how many people could be saved but at least 10, 20 percent should have escaped.

Driven by the thought of repentance, I went through mental agony. By chance, about one and a half years later in autumn of 2012, I happened to meet Mr. Kitta Toshihiro and Mr. Tanigawa Toshihiko. At that time there was a movement to contribute to society for earthquake rehabilitation. They asked me if I had any ideas on how to contribute to society. When

I answered that “How about starting a business to save people’s lives by earthquake prediction, since I have a patent on the topic.”, They proposed to work together using all available means. M.Kitta was managing a company related to movie production. Mr. Tanigawa was the old boy of an information related company. Both of them used to participate in the lecture meetings of Honorary Professor Ueda Seiya of former Earthquake Research Institute of Todai, who was an authority on plate tectonics. They said that they were surprised to hear such words “If someone other than a researcher on seismology can catch prior phenomenon, then earthquake prediction is possible. Seismologists may not be able to predict earthquakes.” I am truly a researcher outside the field of seismology. So, make hay while the sun shines. So about 3 months later, on January 17, 2013 Japan Earthquake Science Exploration Agency (JESEA) as a company was registered. January 17 was the day of the occurrence of Hanshin Awaji Great Earthquake. Mr. Kitta was the chairman with 51% of stock, and I, at 72 years old, was the advisor with 49% stock. Mr. Tanigawa became managing director, and the three-man company started. The business model was like this. Earthquake prediction information would be dispatched every Wednesday to members who pay a monthly fee of 220 yen. But the number of member applications was not as expected. Even with my insistence to related colleagues, members did not reach one hundred. No pay for me was all right, but Mr. Tanigawa had children to look after,

so no pay was not acceptable for him. Mr. Kitta and I were content with no pay. Even with that, rent of a small office in Aoyama, payment to internet provider, and other expenses moved the company close to bankruptcy. As Mr. Kitta said he knew Mr. Iwai Shunji, movie director, so gathering of movie colleagues was tried and a special lecture were delivered to them as an effort to lure members. When one thousand members was reached, we were happy and had a small party. Income from one thousand members was just 220,000 per month and out of this, 20 to 30% must be paid for internet, so the account balance was in red. To avoid bankruptcy, I gave a loan of 10 million yen.

Earthquake prediction information at that time was still immature, it must be admitted that the contents were also poor. At the time I thought bankruptcy was unavoidable, but unexpected good fortunate came to us. The weekly magazine Shukan Post kindly printed a special issue concerning earthquake prediction, as a photogravure. Even then, member increases were very small. However, maybe this was the chance, because Fuji Television requested an interview. At that time Japanese society was noisily involved in the debate about when Nankai Trough Earthquake would occur after the Great East Japan Earthquake. After the Great East Japan Earthquake, there was public criticism of seismologists asking why they could not predict earthquakes. They defended saying “earthquake prediction is difficult.” The interviews of Fuji Television took place from January to

February 2014. It was televised on March 9. At the last interview at the end of February, the series responsible reporter asked me “When will earthquake occur in Nankai area?”, and I answered, “Probably in March”. He was surprised saying “Is that so soon?” I did not make a random guess but thought of the abnormality in GPS data in January and so just spoke out. Taeko watched Fuji Television program on March 9 and was worried saying “Is it all right to say earthquake will happen in March?” But I said, “since television content cannot be erased, I was resigned to having made the statement of fate” and remained silent.

I went to the shrine nearby and prayed. Maybe because of God’s blessing, nine days after the broadcast, i.e., on March 14, there occurred the Iyonada earthquake in Nankai Trough region. (M 6.2 maximum quake 5) stirring up social emotions. Although the scale of earthquake was not large, it was the period when the public was so worried about Nankai Trough region. The number of members of our company increased rapidly reaching more than ten thousand. President Kitta often phoned me with excitement. With this JESEA was saved from bankruptcy.

Around this time, NTT Docomo by themselves helped set up electronic fiducial points at 16 locations in the country. Divisional Director Yamazaki (at present Executive Director) provided great support. At present these electronic fiducial points are still in operation and are useful as basic data of earthquake prediction

and I am grateful for this. Besides, there were JESEA's own electronic fiducial points. The location was in the ground of my student Mr. Kurosawa Asashi's company who lived in Odawara. Another location was in the ground of Tokyo Agricultural University through good office of Mr. Kunii Hirokazu, I would like to thank both Mr. Kurosawa and Mr. Kunii Hirokazu for their cooperation.

Since the ratings of Fuji Television interview was good at that time, the interview was broadcast a total of 7 times, the latest one was the interview taken after Kumamoto earthquake in 2016. Each time members of the company increased, and its operation was well on their way. The weekly magazines Shukan Post, Shukan Josei and the evening edition of Fuji also supported our column in print. This was gratefully acknowledged.

At that time, we relied only on GPS data for earthquake prediction and to find crustal movement from GPS data, it was necessary to visualize various variables. In this connection, it was Mr. Yanagi Hideji who contributed greatly to the development of software. He was the student of Professor Chikazu Hirobumi of Tokyo Electric University who was my student and received guidance from Professor Chikazu and was awarded a doctoral degree. Thus, he was my outstanding student. He made calculations of suddenly moving points in height data H calculated from X , Y , Z data of GPS; constructed visualizations of rising and

sinking images of GPS values within a limited area; completed the construction of horizontal vector illustration showing how much movement there was in the horizontal direction. Even now this software is still in use, and we are very grateful for it.

The distribution of weekly movement of heights of points of more than 4 centimeters, regional distribution of rising and sinking images of points and the illustrations of the distributions of horizontal vectors, as developed by Mr. Yanagi and other abnormal movements, were carefully monitored and when investigated with related actually earthquakes that had occurred, including the source and distribution of maximum earthquake scale. It was found out that several earthquake predictions hit the target. It was possible to display dangerous scale earthquake predictions and explanations in our “Weekly MEGA Earthquake Prediction”, which was distributed to fee-paying members every Wednesday. But thinking of the importance of these predictions, the writing of the contents frayed one’s nerve. I asked my wife Taeko with her woman’s insight to check the draft. I feel most grateful that she did. The deadline for completion of writing was Monday, so on Monday was the day of exhaustion of my nerve and stomachaches. I was responsible for writing up the description of MEGA earthquake prediction for 8 years, but I retired when I became 81 and left the responsibility to staff of the consultation system.

Although GPS data showed a very important precursor of earthquake prediction, it still could not break the limit of 2 or 3 months in prediction accuracy. When the members were asked, many replied that if the prediction was within one month, disaster prevention could be prepared, but 3 months was too long. It is not known whether this was the reason, but the numbers of members started to decrease. The maximum number was nearly 50,000 but now it was approaching 40,000. However, there was income from corporate members, and they barely posed a problem for the running of the company. At present the situation is the same. At the end of 2022, there were 3 Executive Directors including me, with 3 ordinary staff and 2 non-permanent employees, somehow the company could maintain its operation. Staff comprised of Kitta Toshihiro representative Executive Director, Tanigawa Toshihiko Executive Director, Guo principal researcher, Mr. Sasaki Tatsuki and Mr. Choji Masaru, totaling 5 people. Non-permanent employees were Mr. Muramatsu Hiromichi, Mr. Ojima Takayuki making a team of 7 people with good teamwork and friendly relations.

In the past there were staff with some problems, but the present staff were outstanding. Besides, there was Nishimura Akihiko Sensei, former Principal of LCA International School who participated in my earthquake prediction validity research. He cooperated in the earthquake prediction validity research as a volunteer and as ikigai after retirement. We are most grateful

for their contributions.

A big reform in a new prediction method came to pass when I became 80 years old in November 2019. There was an international conference in the famous tourist city of Guilin, China. I participated as one of the keynote speakers. There was Professor Guo Kwang Min of Nanyang Normal University, in the south of China who travelled 1,300 kilometers to meet me at significant cost.

Before this, I received a sudden email from Professor Guo relaying that he would like to leave his professorship and join JESEA in Japan to work on earthquake prediction and asked for employment, but our company could not afford to pay a professor class salary and we rejected the request several times. In China, university professors must submit several peer review papers each year. However, peer reviewers were specialized in seismology, so new earthquake prediction method proposed by Professor Guo was rejected. As a result, there was no place for him as professor in Nanyang Normal University. Moreover, in China it was forbidden to send earthquake predictions to other people. As it stands, his new earthquake prediction method could not be used. At the meeting in the hotel, from my impression he looked gentle and serious and not much like most Chinese people, more like quiet Japanese people. After returning to Japan I discussed with President Kitta, but the answer was the same;

the company could not pay the salary and thus we rejected him. However, Professor Guo said 100,000 yen was sufficient, please let him work at JESEA. I was driven by his zeal and he accepted with a salary of 300,000 yen.

After obtaining resident permit, finding an apartment for Professor Guo, full scale mutual research on earthquake prediction with me commenced. It was quite surprising that Professor Guo with various new ideas proposing phenomena that can be derived from remote sensing, which would be deemed as precursors of earthquakes. I made occurrence probability validation between these phenomena thought to be precursors and discovered an 80% high probability of several precursor phenomena. One of these showed a special cloud pattern in weather satellite images prior to earthquakes. From this, JESEA could make pinpoint prediction (same meaning as earthquake prediction). Not only special cloud images, but also abnormal temperature changes, abnormality in climate stability, etc. were also precursors presented by Professor Guo. What was surprising was the straight-line positioning of some planets, movements of planets, positional relationships of space objects such as planets were also possible precursors. Phases of the Moon were also related to earthquakes. Besides the above precursors, infrasound abnormalities previously used by me, abnormal GPS transmission wave phases, magnetic disturbances, aurora electron jet abnormal variations, all together more than 10 types of precursor phenomena were used to improve the accuracy

of earthquake prediction. Since Professor Guo came to work at JESEA, pinpoint predictions could be dispatched to the members. That is to say, it was possible to predict earthquakes according to the requirements of “within one month”, “one hundred kilometers”, and “more than M6.0.” If allowed a little exaggeration in predictions, this might be called the first glorious achievement.

I became interested in “Who is the bad guy in the prediction of earthquakes? I began to doubt what seismologist said about “sinking of plates”, “active faults”, as the factors creating earthquakes. This theory lacks scientific foundation. No temporal or space observations of plates have been conducted. The same applies to active fault observation. In contrast, in Professor Guo and my proposal, precursor phenomena were all based on scientifically observed data derived from remote sensing. It has become apparent that earthquake prediction is possible with remote sensing technology. This strengthens our self confidence that Professor Guo and my specialty in remote sensing are the keys to earthquake prediction.

In the course of making various investigation, I found out that U.S. earth satellite was conducting scientific observation of solar activity by remote sensing, from the GDES satellite, magnetic field strength was measured by magnetometers, solar flares by X-ray sensor, protons by high energy quantum sensors; and from

the Solar Dynamics Observatory (SDO) satellite, ultraviolet images of the abnormalities on sun's surface. From DSCVR satellite velocity and density of solar wind were also determined. These abnormalities of solar activity are uploaded onto the website called space weather forecast of the National Information and Communication Technology Institute (NICT).

I started to do validity research on occurrence probability of big earthquakes in the past with these solar activity abnormalities. Just before the pandemic, through my niece, Hatsune and her daughter, Ayane I was introduced to Nishimura Akihiko Sensei, former principal of LCA International Primary School. Nishimura Sensei would like to join as a volunteer in the earthquake prediction research to spend his remaining life after retirement. Instead of no-remuneration, with the promise to transfer my earthquake prediction know-how, he became my research assistant. Nishimura Sensei joined me in the research and was given the task of occurrence probability validity checks between various solar activity abnormalities and past earthquakes. Together with Nishimura Sensei, in September 2020 we authored an academic thesis entitled "Occurrence Probability Validity Research between big Earthquake and Solar Activity Abnormalities."

In sunspots nuclear fusion of hydrogen gives rise to 300-600 km per second solar wind radiated into space. Large nuclear fusions create solar flares reaching the X level (maximum level),

inducing magnetic storms disrupting the earth's magnetic field and creating aurora, and frequency interference. When the orbits of the Moon, Mercury, Venus position these bodies in a straight line between the orbital paths of the sun and the earth's solar wind will create mammoth spiral phenomenon and earth magnetic disruption. As a result, the earth is shaken and thus an earthquake is induced. The earth is rotating on its axis at speed of 460 meter per second and rotates around the sun at a speed of 30 km per second. The upper part of the inside of the earth, the mantle is at high temperature, high pressure fluid, receiving outside centrifugal forces to spill out onto the surface all the time. Along the volcanic regions at plate boundaries, when there is great turbulence of solar wind, volcanic eruptions will occur. In case of not reaching eruption level, cracks will occur at the crest, spilling out radon gas, a high temperature vapor creating a fumarole phenomenon, abnormal change in surface temperature, air temperature and relative humidity near the surface, rising to the sky creating peculiar cloud patterns. After the gas or vapor dissipates, concretion starts creating depressions or sinks inducing earthquakes. When surface temperature rises the magnetic strength of the magnetic declines, creating abnormal readings of the magnetometer. During the Edo era, if a nail under a magnet fell down this was the prediction of a big earthquake. It can be said that knowledge of our forerunners makes sense.

The above interpretation is my new theory and is called “Space Movement Induced Earthquake Theory”, with the hope that young researchers having flexible thinking faculties will in the next 50 to 100 years make scientific proof and have it accepted nationwide.

Moreover, with further validation research, it became clear that on new or full Moons and when the planets of the solar system are aligned in a straight line with the sun and the earth, the probability of occurrence of abnormal solar activity is high. The reason is not clear and looking from the earth the approaching of more than two planets was the same. This validation was also presented as academic thesis authored together with Nishimura Sensei entitled “Correlation Validation of Planet Approach-Straight Line Formation and Occurrence of Earthquake”.

There was Mr. Ojima Takayuki who supported me in the validity research as a research assistant. Around the time of setting up the Murai lab at IIS of Todai he came from Hosei University to work on thesis research at Kobayashi Lab next door. This happened 50 years ago. With the good fortune of being invited to a dumpling party at the Murai lab, after graduation, he became a research student at the Murai Lab. After that he was recommended to work at Zenitakagumi construction company. He worked on the construction of a Center for Space Research Institute of Todai at Uchinoura in Kagoshima. Murai lab was

involved in the design of the rocket center. After retirement his wife said it was a nuisance to stay at home all day, so he asked to join in the earthquake prediction validity research under my guidance. Mr. Ojima was extremely polite and made detailed validations. He was involved in the validity research on temperature abnormal variation and earthquake occurrence. The result was published in the academic thesis co-authored with me entitled “Correlation validation between abnormal temperature variation and earthquake occurrence.” He made detailed validation to show correlation between abnormal variation of air temperature and earthquake occurrence. I would like to thank him.

Validation research of Nishimura Sensei and Mr. Ojima was at least above Master’s degree thesis. I presented a certificate of “Earthquake Prediction Scientific Technologist” to these two people as role models of earthquake prediction science.

The above research paper was published in “Earthquake Prediction” the journal of “Earthquake Prediction Study Group” comprising a small number of researchers set up by me in May, 2021. The submitted paper was strictly peer reviewed by Professor Takagi Masataka of Kochi Technical University and Professor Tokunaga Mitsuharu of Kanagawa Technical University. We were grateful for their approval of the paper. The earthquake prediction study group was dissolved in December 2022. This was due to my reaching old age and my decision to set the boundary after

having presented my new theory entitled “An Exposition on Space Movement induced Earthquake” as special submit paper in the last volume of the group’s journal. My physical limitations, especially poor eyesight, was quite severe. Even with spectacles, it was difficult to read small characters in the newspaper. This was the main reason. I walk a total of more than 5,000 or 10,000 steps a day divided in two or three times, so my legs and loins were still be satisfactory, but the poor eyesight was incurable. So, I made a decision to retire at the end of January 2023.

I could attend as an active member of the tenth anniversary of JESEA established on January 17, 2013. January 17, 2023 was the 28th anniversary of Hanshin Awaji Great Earthquake in 1995. My life after retirement had been involved in earthquake prediction for 20 years and was quite fulfilling without time to ease of my mind.

On the 10th anniversary day, for the achievement of the great contributions to the actual application and commercialization at world level, but for the most difficult earthquake prediction I presented a certificate of appreciation to Mr. Kitta representative Executive President, Mr. Tanigawa Executive Director and Mr. Guo Kwang Min, Principal Researcher with my heartfelt gratitude. Even after retirement, I will continue to do research on earthquake prediction especially with a thought to provide earthquake prediction information to those disaster-prone people.





Gave a lecture on prediction of earthquake with a new theory “Space Movement induces Earthquake” on June 9,2023 organized by GISTDA.

The book “Lessons learned from East Japan Great Earthquake” by Professor Murai.



15 Epilogue

NHK had a program called Family History, in which famous people came out to tell about the route and the happenings in family of ancestors based on detailed investigations. Most of them did not even know or could not reminisce about their parents. My two sons for sure, not to mention my grandchildren, almost certainly do not know about my life. Even my wife, Taeko who lived together with me for a marriage of 55 years knows only odds and ends. For myself, the memory of past events gradually disappeared, becoming doubtful about the real facts. Referring to old diaries or memos or records as much as possible, this book was written, but many places may be dubious. It is no wonder that some might be based on my own biases or self-content or conveniences. My sons or my wife Taeko might even think that “I did not know about that” in some places in the book. However, this book was written from my standpoint and my real intention without prior checking by anybody. So, if there are any incorrect portions or unsuitable points, I beg for your indulgence. It is an autobiography written with good intention.

To decide on the title of this book, I again recalled what constituted my life. My weak point is short temper, prone to anger, making self-righteous and sudden decisions. As already written somewhere, from my animal instinct decisions are made in a flash of which 80% to 90% were successful. On the other hand,

looking at the good points, hitherto unheard-of original creative ideas, I executed important decisions, which were successful. in “A Life passing through Original Creativity.”

I may have made enemies, but I am also blessed with a lot of friends. I said that I am short tempered and a dogmatist. But I learned “logical debate” obtained from the experience of being director of ISPRS Council constituted mainly of European and American people, and had acted in accordance with opinions based on logic, with integrity across the world and having met with top class people of leading countries. I always sighed at the late decision making of Japan. My sudden decision, quick resolve is the norm of top-class countries in the world.

Some Japanese weekly magazines described me as “Outsider samurai”, or “Lonely knight”, but for one who hates blind following, “living through original creativity” is important.

Lastly, I would like to thank Dr. Suvit Vibulsresth who translated Japanese manuscript into Thai and English. I would also like to express my deep appreciation to Professor John Trinder for his kind editorial of English text.

Profile of Murai Shunji

Name : Murai Shunji

Born : September 19, 1939 in Tokyo

Mother : Murai Chieko, Father : Murai Sakari

Primary School : Yachikanai Nambu Primary School, Yamagata Prefecture, Ematamura Primary School, Yamagata Prefecture, moved to Kamisugi Yamadori Primary School, Sendai City, Miyagi Prefecture, finished primary school at Komatsunagi Primary School, Setagaya Ward, Tokyo

Secondary School : graduated from Kyoiku University attached Secondary School (1955).

High School : graduated from Toyama High School, Tokyo (1958). Entered University of Tokyo, Science 1 (1959 participated in boat racing in Rome Olympic in 1960, participated in World Championship of boat racing in Lucerne, Switzerland in 1962)

Graduated from Civil Engineering Department Faculty of Engineering University of Tokyo (1963)

Worked at Nippon Koei Co. Ltd. (1963-1966) the last year was dispatched to Ghana, Africa, after that unemployed Institute of Industrial Science, University of Tokyo (1966, from research student to become lecturer)

Marriage to Suzuoka Taeko (1967, residing at Asagaya, Suginami Ward, Tokyo)

Eldest son born (1968), second son Tetsuya born (1969)

Received Doctor of Engineering, University of Tokyo (1970)
promoted to Associate Professor (1971), Murai lab became
independent (1973)

New house at 21/9, 4 chome, Mejirodai, Hachioji City, Tokyo (1972)

Participated in ISP at Helsinki Congress, family travel to Europe via
Siberia Railway (1976)

Inauguration of 1st ACRS in Bangkok, Thailand (1980), 2nd ACRS in
Beijing, China, become AARS Secretary General (1981)

Promoted to Professor of Institute of Industrial Science, University
of Tokyo (1983)

ISPRS Congress Director (1984), Secretary General of ISPRS at Kyoto
Congress (1988), President (1992), 1st Vice President (1996),
Honorary Member (2000)

Chief Editor “Sokuryo”, Journal of Japan Survey Association (1989)

Starting the first Regreen Movement (RGM) in tropical forest area
of Thai border (1991), and continued since.

President of Japan Association on Remote Sensing (JARS) (1992)

Dispatched to Asian Institute of Technology (AIT) in Thailand as
JICA expert (1992), building a new house in the village along
Chao Phraya River and stayed with wife, dog and cats,
twice, totaling 5 years (1993-1999)

Honorary Fellow of International Training Center for Aerial Survey
and Remote Sensing (ITC) (1993)

Honorary Professor, Wuhan University of Surveying (now Wuhan
University) (1994)

Decorated with Thai Knight Commander of the Most Exalted Order
of the White Elephant (1997)

Participated in ISPRS strategy meeting (1998)

Constructed a new building of Geoinformatics Center (GIC) at AIT,
inaugurated by HRH Princess Maha Chakri Sirindhorn (1999)

Chairman of the 2nd Committee of UNISPACE of UN (1999)

Retired from University of Tokyo, advisor of Kokusai Aerial Survey
Co. Ltd., Honorary Professor, President of Japan **Society** of
Photogrammetry, Special Invited Professor of Keio University
(2000)

Bought a resort house at Ogura no Sato, Karuizawa City (2000)

Started research on earthquake prediction by invitation of Mr. Araki
Harumi (2002)

Received patent “Earthquake, Volcano eruption prediction method”
(2004)

Established Space Information Integrated Supervisory Technician
Systems of Japan Survey Association (2005)

President of Japan Survey Association (2007)

Established Japan Earthquake Science Exploration Agency, Advisor
(2013), President (2017), hired Professor Guo Kwang Min as
Principal Researcher (2021), retired on January 31, 2023,
Honorary President (Feb. 1 2023).

Glossary

AARS	Asian Association on Remote Sensing established in 1981 during 2 nd ACRS in Beijing, China
ACRS	Asian Conference on Remote Sensing first in 1980, in Bangkok, Thailand.
AIT	Asian Institute of Technology formerly SEATO Graduate School
Boshin Senso	Japan Civil war in 1868-69
Ochanomizudai	Ochanomizu University for women, in Tokyo
ERIM	Environmental Research Institute of Michigan
EROS Data Center	Earth Resources Observation System Data Center Landsat Data Depository Center of U.S.
ETH	Eidgenossische Technische Hochschule in Zwich Switzerland
Geidai	Tokyo Geijutsu Daigaku Tokyo Arts Univesity
GISTDA	Geoinformatics and Space Technology Development Agency
Hongo campus	Main campus of University of Tokyo
ikigai	reason for being or life purpose
ISPRS	International Society for Photogrammetry and Remote Sensing
ISP	International Society for Photogrammetry
ITC	International Training Centre for Surveying and Mapping in Enschede Natherlands

Murai Lab	In Japan name of laboratory is called after the name of professor
SEIKEN	Seisan Gijutsu Kenkyusho or Institute of Industrial Science (IIS)
Sokuryo	Japanese meaning Survey
Today	Short name for Tokyo Daigaku University of Tokyo
Tsubo	Japan area unit 1 tsubo = 3.30 square meter
UNISPACE	UN International Space Conference 1 st (1968) 2 nd (1982) 3 rd (1999) all held in Vienna Austria
USGS	US Geological Survey



Translator : Dr. Suvit Vibulsresth

- Born** : 20 October 1941 in Bangkok, Thailand
- Education** : D.Eng. (Remote Sensing)
University of Tokyo
Honorary Ph.D. (Geography)
Ramkamhaeng University
- Career** : Executive Director, GISTDA
- Translator of** : Wings of Fire, Inspiring Thoughts, Indomitable Spirit,
India 2020, Thirukkural,
Sri Ramakrishna as we saw Him,
Hozumi Spirit, Manimekalai
- Recipient of** : Surintharaja (Distinguished Translator) Award and
Narathip (Distinguished Writer) Award
: Japanese Government Decoration,
Order of the Rising Sun, Gold Rays with Neck Ribbon