

EAST ASIA HYDROGRAPHIC COMMISSION FIFTY YEARS OF PROGRESS

From 1971 to 2021

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Abstract

The year 2021 marks the 50th anniversary of the East Asia Hydrographic Commission (EAHC). It was established in 1971 as the third oldest Regional Hydrographic Commission located in East Asia. Since then, EAHC has progressed in cooperation of hydrographic services and in development of hydrographic technology for navigation safety and other aims. This article describing comprehensive historical steps and efforts of a Regional Hydrographic Commission in an important area of maritime transport will present readers a suggestive model of regional cooperation in hydrography. One of the suggestions can be summarized that the keys to development of Regional Hydrographic Commission are strong intention, initiative, unity and enthusiasm to leave no one behind.

1. General information

The East Asia Hydrographic Commission (EAHC) is one of the Regional Hydrographic Commissions (RHC). It is composed of countries located in East Asia, including of Brunei, China, Democratic People's Republic of Korea (DPRK), Indonesia, Japan, Malaysia, Philippines, Republic of Korea (ROK), Singapore, and Thailand, with Vietnam in the accession process (**Figure 1**). EAHC was established in 1971 in accordance with Resolution S9 of the 9th International Hydrographic Conference (IHC). The Permanent Secretariat of EAHC is Japan. EAHC is proud to have supported and improved navigational safety in the world's busiest area of maritime transport by providing hydrographic services with cooperation and coordination among EAHC member states, which is sometimes cited as the "EAHC family".

The head of each national delegation is depicted "Chief Hydrographer" in spite of their specific name or title and the team "hydrographic office" is used for the readers' convenience.

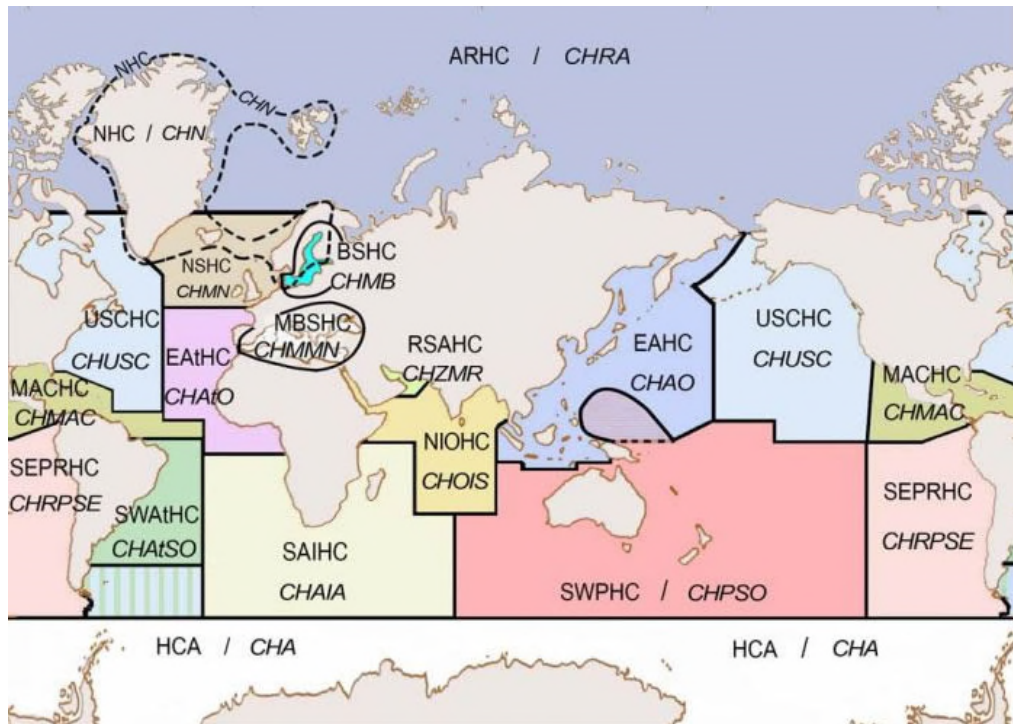


Figure 1: The East Asia Hydrographic Commission (EAHC) is located in East Asia (center).

2. Prehistory ~1971

In 1967, the 9th IHC approved Resolution S9 on Regional Hydrographic Commissions. Before that, the North Sea Hydrographic Commission had been established for cooperation among hydrographic authorities in the North Sea. Taking this commission as a model, the resolution recommended Member States to establish a RHC in each area.

Mr Kawakami, Kiyoshi, a Director of the Japanese hydrographic office, was strongly requested by IHC participants such as Thailand and other Member States to play a leading role to establish a RHC in East Asia. On October 7–9, 1968, the preparatory meeting for the establishment of EAHC was held at the Japanese hydrographic office with the participation of China, Japan, ROK, and Thailand.

Mr Kawakami, who had been promoted to Deputy Chief Hydrographer, participated in this meeting to lead and coordinate the discussion on drafting statutes to illustrate a vision of a brand new RHC.

3. Early years (1971-1990)

On December 12–16, 1971, the first conference of East Asia Hydrographic Commission was held in Tokyo, Japan, following the Statues approval meeting (**Figure 2**). The participants were China, Indonesia, Japan, ROK, Philippines, and Thailand; Japan took the Chair. Mr. Kawakami, who was then Chief Hydrographer of Japan successfully served as the first Chair for the first conference having long served as a mediator and coordinator to establish EAHC.



Figure 2: The 1st EAHC conference in Tokyo, Japan.

Thailand was elected as the first Vice-Chair. The agenda of the meeting included the introduction of ocean mapping at 1/200,000 scale, cooperation in INT Charting, the third edition of GEBCO (General Bathymetric Chart of the Oceans), and Japanese group training program on hydrographic surveys. The Philippines proposed that Japan become the permanent secretariat of the EAHC as a document repository, which was approved. It was decided that the next conference would be chaired by Thailand. This was the start of EAHC's current custom that the Vice-Chair should become the next Chair just after the closing of the conference. Statutes also say the conference is supposed to take place between IHC, which was held every five years at that time and now is held every three years.

The 10th IHC was held in Monaco in 1972. Mr. Kawakami, as the Chief Hydrographer of Japan this time, reported the establishment of the RHC in East Asia, fulfilling the international promise made five years before. Thus, Mr. Kawakami can be called "The Father of EAHC".

On November 2–4, 1976, the "EAHC Special Meeting" was held in Jakarta, Indonesia. In which this was a different meeting from conference, and it was proposed that ROK would be the next Chair of the EAHC, a decision approved on December 20 by correspondence.

The 2nd EAHC Conference was held in Seoul, ROK on March 2–4, 1977 chaired by ROK. China, Indonesia, Japan, ROK, Philippines, and Thailand participated in the conference, with the International Hydrographic Bureau (IHB), and other countries as observers. In the conference, Japan introduced the international development of the World-Wide Navigational Warning Service (WWNWS) and proposed the NAVAREA XI concept in order to promulgate maritime safety information immediately via radio wave broadcast with the cooperation of the regional countries coordinated by the NAVAREA Coordinator. EAHC fully supported WWNWS. The conference also discussed the response to the 11th IHC.

The 3rd EAHC Conference was held in Seoul, ROK on September 2–5, 1980. China, Indonesia, Japan, Philippines, ROK, and Thailand participated. Philippines was elected as Vice-Chair. Japan was approved to become the NAVAREA XI Coordinator by EAHC. It was also decided that Japan would issue the newsletter as the Permanent Secretariat. EAHC newsletter was issued several

times per year for more than thirty years, between 1981 and 2013. This newsletter covered various events such as meetings, training courses, the appointment of new Chief Hydrographers, voice of hydrographic people, etc. helped facilitate a sense of unity for EAHC in the era before the internet.

The 4th EAHC Conference was held in Tokyo, Japan on September 17–20, 1986 (**Figure 3**). Indonesia, Japan, Malaysia, Philippines, ROK, and Thailand participated. Japan chaired for the second time. Encouragement of medium-scale INT charts in the K area and promotion of NAVTEX station establishment in NAVAREA XI area were approved. This was the first occasion that EAHC recorded a discussion on electronic chart display devices.

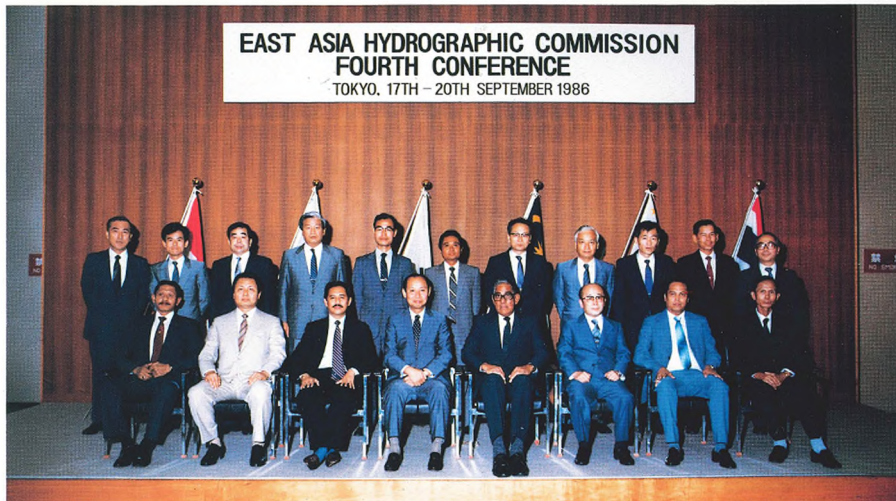


Figure 3: The 4th EAHC Conference in Tokyo, Japan.

In the early years of EAHC, Republic of Korea volunteered to host two conference meetings and showed great generosity by taking on the important role of the Chair. Indeed, in the absence of established and mature operating procedures, customs and practices, the EAHC would not have built the good foundations for cooperation without ROK's significant efforts. Whereas Mr. Kawakami would be the father of the EAHC, ROK surely deserves to be acknowledged as the EAHC foster parent.

4. Quantitative growth (1990-2004)

The 5th EAHC Conference was held on October 8–12, 1990 in Tokyo, Japan. The participating countries were China, Indonesia, Japan, Malaysia, Philippines, and ROK, with others attending as observers. Medium to large scale INT charts in the K area were discussed, following Member State activity reports. Participants were interested in information regarding the latest technologies, with information given by Japan, in particular. It should be noted that “electronic charts” was discussed for the first time in EAHC.

Mr. Rasip, Chief Hydrographer of Malaysia, was elected as the next Chair, and Mr. Laden, Chief Hydrographer of Indonesia, was to be the Vice-Chair.

After the conference, an application for membership of the EAHC in the letter from Captain Wilson Chua N.F., Chief Hydrographer of Singapore, dated October 7, 1992 was received and accepted.

The 6th Conference of EAHC was held in Kuala Lumpur, Malaysia, on March, 28–31, 1995, with 31 participants from the eight member states of China, Indonesia, Japan, Malaysia, Philippines, ROK, Singapore, and Thailand. 31 participants from Australia, Canada, the UK, the US and IHB attended as observers. Singapore participated as a Member for the first time, which means that most of today's current Member States had joined by the time of the 6th conference. These eight countries have been core members of EAHC for a long time, and EAHC has quantitatively expanded. During the meeting, hydrographic technical discussion took place, including the future of ENC (Electronic Navigational Chart). Indonesia took over as Chair and China as Vice-Chair.

The 7th Conference of EAHC was held in Jakarta, Indonesia, on July 4–7, 2000. Participating countries were China, Indonesia, Japan, Malaysia, Philippines, ROK, Singapore, and Thailand. Brunei and Cambodia were observers. Mr. NG Kwok Chu (known as “KC”) from Hong Kong, China, who had been active in the field for some 20 years, also attended.

The 8th Conference of EAHC was held in Shanghai, China on November 11–14, 2003. China, Indonesia, Japan, Malaysia, Philippines, ROK, Singapore, and Thailand participated in the meeting, as well as IHB, Chair of the Strategic Planning Working Group (SPWG), Brunei, DPRK, the US, the UK, and Vietnam as observers. Additionally, KC from Hong Kong, China, Mr. Xu Bins-heng from China, and Mr. Jamie Chen from Singapore as the Assistant Director participated.

5 Qualitative growth (2004~2012)

5.1 Start of project (2004~)

In March 2004, a seminar on ENC in the South China Sea was held by the Japanese hydrographic office in conjunction with WEND in Tokyo. This seminar was an historic international conference that provided an opportunity for the EAHC to engage in substantive activities for the safety of navigation in the region, rather than merely a forum for information exchange. Japan has been engaged in technical cooperation in the Malacca and Singapore Strait for many years to ensure the safety of navigation.

The South China Sea ENC was materialized under the strong leadership of KC from Hong Kong, China and Dr. Parry Oei, Chief Hydrographer of Singapore through the contributions of each member state in the region. It should be emphasized that the South China Sea ENC is a symbol of the qualitative expansion of EAHC, so this article refers to this period as the “EAHC qualitative growth era” (*Figure 4*).

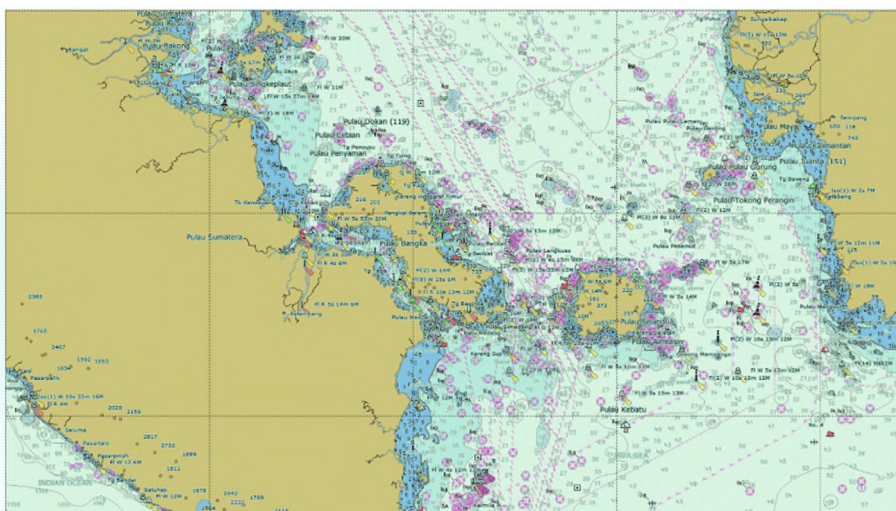


Figure 4: South China Sea ENC screenshot.

The 2nd Extraordinary Conference of the EAHC was held in Seoul, ROK on February 22–24, 2005 chaired by ROK. At that time, the SPWG was working at IHO level to reform the IHO organization and to revise the Convention for the reform. The 3rd Extraordinary International Hydrographic Conference (EIHC3) was scheduled in April of the same year to confirm SPWG work finally. This EAHC extraordinary conference, under the leadership of ROK, was held to prepare for EIHC3.

The agenda included the response to the Sumatra tsunami disaster of December 2004, EAHC's response to the SPWG's consideration, electronic charts of the South China Sea, and capacity building of IHO. Capacity building at the IHO level came up for discussion for the first time at this meeting. Regarding the electronic charts of the South China Sea, KC made a presentation as the leader of the task team. This project, which is a joint publication by EAHC, was an exceptional initiative even at the IHO level. In March 2005, one of the EAHC historical products was released, which is South China Sea ENC Edition 1.

Mr. Nishida (former Chief Hydrographer of Japan), Mr. Xu Binsheng (Deputy Representative of China), Mr. NG Kwok-Chu from Hong Kong, China, Mr. Zaiim from Malaysia, and Dr. Parry Oei from Singapore all attended this meeting and would remain active members in the EAHC for a long time to come.

The 9th Conference of EAHC was held on September 19–22, 2006 in Jeju-do, ROK chaired by ROK. China, Indonesia, Japan, Philippines, ROK, Singapore and Thailand participated in the meeting, with IHB, the UK, the US and Vietnam participating as observers. It was introduced that electronic charts of the South China Sea were officially put into operation in May 2005. There was also a discussion on capacity building.

5.2 Setting up flexible and frequent meetings (2007~)

Since the EAHC Statutes say it holds a conference between IHO Conferences, EAHC had met only once every five years before then. In his role as EAHC Chair, Dr. Parry Oei from Singapore initiated a proposal to convene meetings more flexibly and frequently in order to meet rapid development of technology and society, which was the same conclusion with IHO SPWG to have frequent and organized meetings at IHO level. His intention was to make EAHC become a more substantial business performance body with intense activities rather than only social occasions or “salon of conversation”.

The reason he came up with this initiative was because of the mandate of ECDIS (Electronic Chart Display and Information System) – and the corresponding desire of the international maritime community to have full and consistent ENC coverage with managed overlaps – which has applied significant pressure on the international hydrographic community.

In accordance with the concept, EAHC Chair, Singapore called several meetings by 2009: 1st Coordination Meeting in Singapore (January 2007); 1st ENC Task Group (TG) Meeting (June 2007); 2nd Coordination Meeting in Chiang Mai, Thailand (January 2008); 2nd ENC TG Meeting in Cebu, Philippines (July 2008); 3rd Coordination Meeting in Hainan Island, China, (February 2009).

The Coordination Meeting, which is supposed to make decisions, was to be held annually. ENC Task Group, which is supposed to discuss ENCs were to be held once every six months (decided in 2009). These meeting setups took advantage of the EAHC region not only to strengthen cooperation but also to establish personal relationships within the region. Main discussion issues were ENC harmonization and capacity building.

One of the significant outcomes of this period is South China Sea ENC (SCS ENC) progress. SCS ENC is a unique ENC product not seen in the world. It is small scale ENC of South China Sea where heavy maritime transport of cargoes and tankers go frequently back and forth between East Asia and Europe or the Middle East and East Asia. In order to enhance safety of navigation

on the South China Sea, EAHC decided to publish the common ENC cooperatively after the data harmonization and the data gap elimination. ENC owner is EAHC itself, not any specific country. This idea overcame the difficulty of producing high quality ENC covering a potentially difficult sea area.

Another unique point of SCS ENC is high degree of engagement and contribution by each Member States. Almost all Member States were involved in this project even they are not the coastal states of South China Sea. This project is not “led by limited members” or “led by developed countries only”. Every Member State of EAHC delivered their best effort such as digitizing, compiling, inspecting, validating, correcting data or checking ECDIS performance country by country.

Another unforgettable effort on SCS ENC was provided by KC from Hong Kong, China and Dr. Parry Oei, Chief Hydrographer of Singapore with their strong, outstanding and everlasting leadership and enthusiasm.

In this way, the second edition of SCS ENC was published in October 2008.

The 10th Conference of EAHC was held in Singapore on October 15–17, 2009 chaired by Singapore. Several issues were discussed but thanks to establishment of other meetings, the conference was able to focus on more general matters or broader issues. Thailand was elected as Chair and the Philippines as Vice-Chair. It was also decided that ENC harmonization would be discussed in ENC Task Group (TG), as it is important to harmonize ENCs in order to meet ECDIS equipment mandatories by 2012.

The 3rd ENC TG Meeting was held in Bangkok, Thailand, on January 20, 2010. In accordance with the forthcoming mandatory carriage of ECDIS equipment in 2012, some countries proposed to co-produce small scale ENCs in all East Asia region to expand SCS ENCs. But some countries expressed their concern for such ambitious challenges. Japan reported that Japan and ROK had agreed to resolve the ENC overlap in April 2009. It was decided that this ENC TG Meeting would be held every six months. Just after the ENC TG Meeting, the 4th Coordination Meeting was held in Bangkok, Thailand on January 21–22, 2010. China proposed to improve EAHC-related websites. The new EAHC website was launched in June 2010, which also provided SCS ENC data.

The 4th ENC TG Meeting was held in Hong Kong, China on March 17–19, 2010, and the 5th ENC TG Meeting was held in Bangkok, Thailand on June 21–23, 2010. Each country reported on the status of coordination of ENCs. The 6th ENC TG Meeting was held in Jogjakarta, Indonesia on January 26, 2011. The 5th Coordination Meeting was held on January 27–28, 2011 in Jogjakarta, Indonesia. The 7th ENC TG Meeting was held in Beijing, China on July 12–13, 2011.

The 8th ENC TG Meeting was held on January 16–17, 2012 in Okinawa, Japan. The concept of Regional Electronic Navigational Chart Coordinating Centres (RENCs) in the East Asia region was proposed to ensure data uniformity, quality, consistency, and up-to-date maintenance. The 6th Coordination Meeting was held on January, 18–19 2012 in Okinawa, Japan. The RENC in East Asia concept was endorsed. It was also reported that Vietnam had applied for IHO membership.

The 9th ENC TG Meeting was held in Incheon, Korea on July 25–27, 2012. ROK suggested that EAHC should prepare the S-101 transition. In order to develop EAHC small scale ENC, the chair suggested to locate a portal site to identify each country ENC in this region.

The idea of EAHC ENC co-production brought a heated debate by proponents and opponents. But it should be underlined that even if they have different opinions on some points, EAHC has been as one family to share the same enthusiasm for safety of navigation and the desire for technology improvement on cooperative basis.

The lessons learned here were the benefits and drawbacks of back-to-back meetings. EAHC had a Coordination Meeting that had rather general character and ENC TG Meeting that was more specific to ENC, back-to-back. The benefit was to avoid travel cost including time and money. The drawback was sometimes the decision-making process was too vague as the meetings' members are almost the same, which may have brought the discussion back and forth.

5.3 Capacity Building

On April 28-29, 2011, an ad hoc review meeting on Capacity Building (CB) was held in Incheon, ROK. After reports by each Member State, it was agreed to consider three categories for the future of capacity building in EAHC: (1) basic, (2) development, and (3) training for instructors, and to train instructors within the region as a "self-propeller" approach, which is now called TFT, Training For Trainers. Here, the concept of TFT was proposed for the first time.

On July 14–15, 2011, the Capacity Building Coordination Meeting was held in Beijing, China. At this meeting, Korea reported that it had been contributing US\$ 100,000 per year to the IHO CB since May 1, 2006, which was increased to 400,000,000 won (US\$ 400,000) in the Memorandum of Understanding (MoU) signed with IHO on June 16, 2011. Following the results of the ad hoc review meeting in April of the same year, the EAHC CB Five-Year Plan was discussed.

The EAHC capacity building approach can be summarized as follows: As is reiterated in this article, one of the significant charters of EAHC is the involvement of each Member States. While EAHC also has made use of IHO Capacity Building Fund, some EAHC Member States offers voluntarily capacity building for the region by themselves. In particular, China, Japan, ROK are the offering states. It should be also underlined that the relationship between IHO and EAHC on capacity building is not for one-sided benefit. The Nippon Foundation in Japan has provided enormous capacity building projects such as the GEBCO New Hampshire University training course on hydrography and the GEOMAC training course in UKHO to train competent cartographers. ROK has also provided the Mississippi University training course on hydrography and TFT training for trainers. Japan and ROK also provide group-training courses via governmental aid program for all over the world. All IHO members enjoy the benefit from capacity building programs EAHC Member States provide.

6. Modern Meeting Scheme (2012~)

6.1 11th EAHC Conference in 2012

The 11th EAHC Conference was held on September, 4–6 2012 in Chiang Mai, Thailand chaired by Thailand. The new structure of the EAHC proposed by Singapore was approved (*Figure 5*).

The Steering Committee (SC) is the de facto decision-making body, held annually chaired by Chair of EAHC, which is a successor to the Coordinating Meeting. The Chart and Hydrography Committee (CHC), is to discuss mainly technical issue such as charting and surveying, etc. Training, Research and Development Center (TRDC), Board of Directors (BOD) is kind of the meeting to discuss the capacity building of EAHC mainly. The Regional ENC Coordination Center (RECC) will be in charge of coordinating electronic charts.

At this conference, the Chair was replaced by the Philippines from Thailand. In January of 2013, the 10th ENC TG Meeting and the 7th Coordination Meeting were held in Busan, ROK. This is the last Coordination Meeting replaced by the SC as was decided at the last conference.

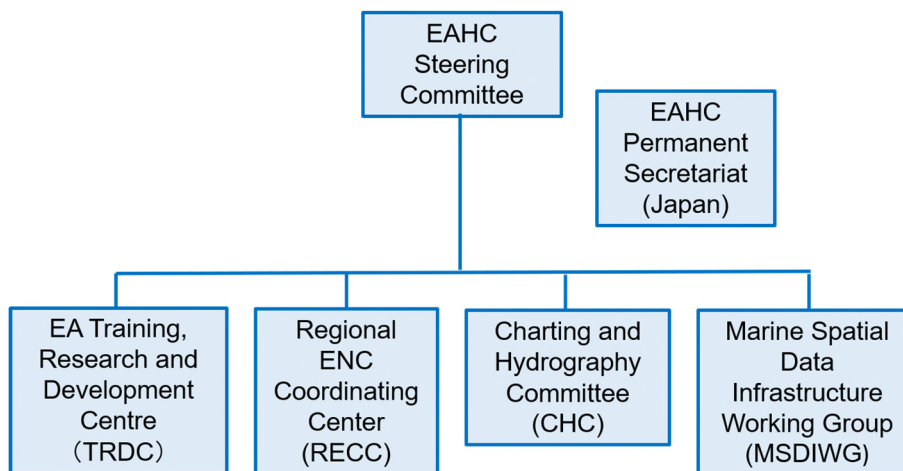


Figure 5: Structure of East Asia Hydrographic Commission.

6.2 First Subsidiary Meetings

The 1st Charting and Hydrography Committee (CHC) Meeting was held on June 26–28, 2013 in Bohol, Philippines. The Chair was Singapore and the Vice-Chair was Indonesia. Several technical issues were discussed such as airborne laser surveys introduced by ROK and new nautical chart symbol to depict earthquake effects introduced by Japan. Some raised a perspective of SCS ENC regarding new edition compiling procedures. And not only CHC but also SC were to discuss SCS ENC future.

The 1st TRDC-BOD Meeting was held in Busan, ROK on September 4–5, 2013. Mr. Jamie Chen of Singapore chaired the meeting, while Mr. Yong Baek of ROK served as Vice-Chair. The 2nd TRDC-BOD Meeting was held in Kuala Lumpur, Malaysia on February 23, 2014. The annual plan of EAHC CB and workshops on tide, Marine Spatial Data Infrastructures (MSDI), and maritime boundaries were decided. Training for Trainers (TFT) was proposed by ROK and it was held in 2013. Technical visits to Vietnam and Brunei and the TRDC logo and website were also discussed.

The 1st SC Meeting was held in Kuala Lumpur, Malaysia on February 26–27, 2014 chaired by EAHC Chair. Malaysia proposed Japan should lead EAHC 50th anniversary event.

The 1st RECC Working Group Meeting was held in Singapore on February 10, 2015, back-to-back with the 2nd SC Meeting. On June 28, 2015, the 2nd RECC Meeting was held in Tokyo, Japan, which was approved.

6.3 Later Subsidiary Meetings

The 2nd SC Meeting was held in Singapore on February 10-12, 2015. Technical visit to Cambodia was approved. The 2nd CHC was held in Kuala Lumpur, Malaysia on February 24–25, 2014. The 3rd CHC was held in Hong Kong, China on July 30–August 1, 2014. The 4th CHC was held in Tokyo, Japan on June 28–30, 2015.

As it is well known that ROK is one of the countries contributing S-100 development currently, in the 2nd CHC, ROK made impressive presentations on S-58 and S-57 UOC online manual. Also, at the 3rd CHC, ROK introduced S-100 progress of the IHO.

During these CHC meetings, Member States introduced their hydrographic activities to raise the technical level of the region. China reported their trial on hydrographic database focusing on the

language aspect of which most Asian countries have a similar problem. DPRK presented that DPRK had started publishing ENCs in S-57. Malaysia presented the ENC compilation trial from source data, not paper charts. Indonesia had initiated the definition of the charting symbol of Asian specific features such as offshore houses that was not previously decided in S4. Japan developed Satellite Derived Bathymetry (SDB) technically. Singapore reported on the joint resurvey of the Malacca-Singapore Strait. Philippines presented the importance of hydrography to protect from high tide disasters like huge typhoons. Indonesia, Malaysia and Singapore also presented the importance of bathymetry in searching for aviation accidents. These bidirectional or multi-directional suggestions and recommendations are the most important factors of regional cooperation. No one was left behind. Everyone played a main role.

It was decided that KC would again serve as SCS Administrator, with no fixed term. It was also recommended that the EA ENC Administrator be the same person as the SCS ENC Administrator.

The 2nd TRDC-BOD Meeting was held in Kuala Lumpur, Malaysia, on January 23, 2014. The 3rd TRDC-BOD Meeting was held in Singapore on January 6–8, 2015. The 4th TRDC BOD Meeting was held in Manila, Philippines on October 12, 2015.

The Chair of TRDC-BOD, Mr. Jamie Chen, led capacity building training, approved the Five-Year Plan, and drafted application to IHO CB fund.

6.4 12th EAHC Conference in 2015

The 12th EAHC Conference was held in Manila, Philippines on 13–15 October 2015. It was approved that ROK would be the permanent coordinator of the CB of the EAHC. It was also decided that Malaysia would be the Chair and Japan would be the Vice-Chair at the end of the meeting.

The 3rd SC Meeting was held in Solo (Surakarta), Indonesia, on 24–26 February 2016. Japan proposed a selection method for the IHO Council seat from EAHC to make it reasonable and fair. It was decided to establish the EAHC MSDI Working Group (MSDIWG).

The 4th SC Meeting was held on February 22–24, 2017 in Tokyo, Japan. This is the first time Timor-Leste participated. Brunei was formally admitted to the EAHC in March 2016. As for the IHO Council member selection, Japan, Singapore, China, and ROK were selected for their ship tonnage; Malaysia was selected as Chair and Indonesia was selected, thanks to Thailand's withdrawal. A working group was established to define the strategy for the EAHC, which was called STAR and was to be led by Japan.

Hong Kong, China was decided to be RECC coordinator. The 5th SC Meeting was held on March 6–8, 2018 in Xiamen, China. There were reports from TRDC, E-MIO, South China Sea Tidal Project, and MSDI.

The 5th CHC Meeting was held on October 19–21, 2016 in Singapore. The Chair concluded that the SCS ENC would be temporarily suspended. Regarding the EA ENC Administrator, a proposal was made that Hong Kong take on the role of office of EA ENC Administrator.

The 6th CHC Meeting was held in Tokyo, Japan on August 16–18, 2017. They discussed MSDI, crowdsourced bathymetry (CSB), shallow water depth, and IHO resolutions for disaster response.

The 5th TRDC-BOD Meeting was held on 23–24 February 2016 in Solo (Surakarta), Indonesia. The 6th TRDC-BOD Meeting was held on February 21, 2017 in Tokyo, Japan. The 7th TRDC-BOD Meeting was held on August 21, 2017 in Tokyo, Japan. The 8th TRDC-BOD Meeting was held in Xiamen, China on March 5, 2018.

During the meetings, Japan repeatedly stressed the importance of Maritime Safety Information (MSI, **Figure 6**). In accordance with IHO CB procedures, the CB Five-Year Plan and the report of training courses were approved to be submitted to the IHO CB Sub-committee. EAHC focusing on fields of hydrography such as LiDAR (Light Detection and Ranging), SDB, disaster prevention and GNSS (global navigation satellite system) tidal observation were given full consideration in establishing the CB plan.

On June 2, 2017, it was notified by a circular to stop using the South China Sea ENC because the new edition was not supposed to be completed soon and the current edition was not updated enough for navigation.

A technical visit to Cambodia was conducted on April 3–5, 2017, the aim of which was to raise the profile on hydrography in Cambodia and encourage Cambodia to join IHO and EAHC.



Figure 6: Training on Maritime Safety Information.

6.5 13th EAHC Conference in 2018

The 13th EAHC Conference was held on September 18–20, 2018 in Putrajaya, Malaysia jointly convened with “Hydrography South East Asia (HydroSEA) Conference & Exhibition 2018” hosted by Chief Hydrographer of Malaysia, Dato Hanafiah (**Figure 7**). After the conference, Japan became the EAHC Chair and Indonesia became the Vice-Chair.

The 6th SC Meeting was held on February 20–22, 2019 in Bali, Indonesia. The EAHC Statutes Amendment Working Group was led by Malaysia. The IHO Strategic Plan was also discussed. Indonesia reported on its efforts to establish a separated traffic zone in the Sunda and Lombok Straits. China introduced the compilation of the Chinese version of the Hydrographic Dictionary.

The 7th CHC Meeting was held on November 28–29, 2018 in Chiang Mai, Thailand. The 1st MSDIWG Meeting was held at the same time in Chiang Mai, Thailand on November 29–30, 2018. The progress of MSDI in each country was reported. The Chair, ROK, reported on the concept of MSDI and the global situation. The 8th CHC Meeting was held on June 27–28, 2019 in Singapore. The future of paper charts, SDB and resurvey of the Malacca-Singapore Strait were the main topics of these two meetings.

The 9th TRDC-BOD Meeting was held on February 29–30, 2019 in Bali, Indonesia. Mr. Jamie Chen from Singapore, who had served EAHC activities for a long time, finished his term as Chair, succeeded by Mr. Hak Yoel You (Peter). Mr. Yanuar Handwiono from Indonesia was assigned as Vice-Chair. The 10th TRDC-BOD was held on June 25, 2019 in Singapore. The 2nd MSDIWG Meeting was held at the same time. The 11th TRDC-BOD was held on February 3 - 4, 2020 in Tokyo, Japan.

TRDC-BOD meetings can be characterized as “EAHC Capacity Building coordination meetings”. It is the most practical and most pragmatic meeting body in EAHC, focusing on planning and reporting capacity building. In the 11th TRDC-BOD Meeting, it was decided that Indonesia, Malaysia and Hong Kong, China will collaborate to standardize the basic cartography course without IHO funding. This case is well marked in this region. All members have intentions, initiatives and spirits to develop hydrographic activities in EAHC. All of them have involved themselves and have done their best.

During this period, there three topics to be noted: (1) On January 1, 2019, one cell of SCS ENC, EA200004, was published, which is available for free. (2) It was informed that Dr. Parry Oei, who had long served as Singapore’s Chief Hydrographer, had retired. (3) High-level visit to Cambodia was carried out in August 2019. The delegation composed of EAHC Chair, Dr. Yukihoro Kato from Japan, Indonesia, Hong Kong, China, and technical advisors made an official visit to Cambodia Hydrographic Office and the major port, Sihanoukville Port. Dr. Kato also had an official meeting with Advisor to Prime Minister of Cambodia to explain the importance of Cambodian presence in the international field.



Figure 7: The 13th EAHC Conference in Putrajaya, Malaysia.

7. EAHC 50 years with COVID-19 challenge (2020~)

On February 5 - 7, 2020, the 7th SC Meeting was held in Tokyo, Japan. Unfortunately, there was no participant from mainland China (except Hong Kong) at this meeting due to the COVID-19 spread, with participation from the Chinese Embassy in Tokyo instead. The fact that all the Chairs of the IHO council, Inter-Regional Coordination Committee (IRCC) and Hydrographic Services and Standards Committee (HSSC) participated in the meeting indicates the growing influence of the EAHC.

At the meeting, there were reports on IHO activities, GEBCO and Seabed 2030 activities. In relation to the EAHC, there were presentations by Singapore on its proposal for an IHO Innovation and Technology Lab, seeking support from each country.

In the report from the EAHC subordinate organizations, the work plan from MSDIWG was approved, and the training plan from the TRDC-BOD was approved. In addition, the MSDI workshop by Indonesia and the Terms of Reference (ToR) of the working group led by Malaysia were approved.

In preparation for the 2nd IHO Assembly (A-2) scheduled in coming April, Japan, Singapore, China, and Korea had been chosen to become IHO Council Members by tonnage respectively. Indonesia was elected as Vice-Chair. Thailand was also selected, thanks to the voluntary withdrawal by Chief Hydrographer of Malaysia, Dato Hanafiah.

COVID-19 has since affected every aspect of international activities. Originally, CHC Meeting was scheduled to be in Vietnam in 2020 and SC Meeting in Thailand in early 2021. Japan, as Chair, decided to postpone both meetings for one year, which was circulated.

On January 21, 2021, an ad hoc meeting was chaired by Mr. Shigeru Nakabayashi, Director of the International Affairs Office of Japanese Hydrographic Office. This was the first instance of a remote meeting held by EAHC. The CB Coordinator, ROK, gave a presentation on Capacity Building Sub-Committee (CBSC) in particular. Japan made a presentation about a proposal to define the strategy of the EAHC, based on the IHO strategic plan. Japan advocated a shift from meeting-driven to project-driven approaches in response to the fact that face-to-face meetings are extremely difficult due to the corona pandemic, and that the needs for technological development and the increasing importance of oceanographic information continue to grow. At the meeting, the chairperson reiterated that hydrographic service officials are essential workers, which was agreed upon by many participants.

EAHC 50th Anniversary Webinar was held remotely on December 9, 2021 (**Figure 8**). EAHC Member States, such as Brunei, China, Indonesia, Japan, Malaysia, Philippines, ROK, Singapore, and Thailand attended while DPRK unfortunately did not. Future Member States and related states such as Cambodia, Vietnam, Australia, the UK, the US attended as observers. Mr. Kiyoshi Amada from Japan International Cooperation Agency and Mr. Adam Greenland from South-West Pacific Hydrographic Commission delivered celebration speeches.

Dr Parry Oei, former Chief Hydrographer of Singapore, delivered a keynote presentation for discussion by EAHC Chief Hydrographers, the title of which is "EAHC – Looking forward to the next 50 years!". In the presentation, he summarized the EAHC 50 years' journey, which was transit from analogue to digital world and overcoming capability gaps to level technical competency across the region, according with increasing trading volume in this region. After that, he counseled that the EAHC would need leaders who provide vision and direction and lead the Hydrography Offices to play a primary role. He also advocated that hydrographic offices should make use of their valuable commodity of high-quality hydrographic datasets. He concluded that EAHC should work along with the IHO and industry partners to meet new challenges. Every attendee shared the EAHC concept that the EAHC agree not to leave anyone behind. On December 10, 2020, the 8th SC Meeting was held remotely, chaired by Japan, EAHC Chair. Despite limited conditions, rich discussion such as on the EAHC Strategic Plan, EAHC Statutes, and Capacity Building were carried out with Mr. Mathias Jonas as IHO Secretary General, Dr Geneviève Béchard as Council Chair.



Figure 8: : 50th Anniversary Webinar of the East Asia Hydrographic Commission.

8. Conclusion

Fifty years ago, the economy in this region was not as active as it is now. Nowadays, stunning changes have come to be seen in this region. Moreover, every Member State provides hydrographic activities by themselves.

While some cases of EAHC activity may appear to have elements of "back and forth", and not going straight to the target directly, this would not be a fair summary of the EAHC's work. To be sure, if the EAHC had adopted a structure like an "oligarchy" or "monarchy", some areas of progress might appear to have been more efficient. However, the real success, and the real progress, which has been achieved, has been the development of a common, collective leadership model at the EAHC, with no single member being dominant. As every country contributes, we sometimes encounter differences of opinion but EAHC believes that free and active exchanges of opinions is a source of power to develop hydrography. EAHC also believes that we must move forward together to develop hydrography substantially. EAHC Chairs appreciate the Members for their dedicated efforts. The culmination of many small efforts will without doubt lead EAHC in the right direction.

EAHC is fully ready for another successful 50 years to come, and eager to continue moving forward together.