REPORT
on
The Fourteenth Session of the Council of the
Far East Radionavigation Service (FERNS)

PROF. DR. GUG SEUNG GI
KOREA MARITIME UNIVERSITY

1. Opening of the Session

1.1 The fourteenth session of the Council (FERNS 14) was held in Jeju, Republic of Korea, during the period 24 – 28 October 2005. Mr. Lee Jang Woo, Aids to Navigation Division, Maritime Safety Management Office, MOMAF opened the meeting and welcomed all participants to Korea and to Jeju Island in particular.

1.2 The welcome address by Mr Lee Jang Woo is given in Annex 1.

1.3 At the invitation of the Chairman each participant was introduced to the meeting. Representatives of the following Members and Observers participated in the session:

Members:

The People's Republic of China;
Japan;
The Republic of Korea; and,
The Russian Federation.

Observers:

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA);

Apologies were received from:

Mr Stewart Shoulta, USCG;
Mrs Kirsten Ullbæk Selvig, NELS

1.4 A full list of participants is given in Annex 2.

2 Approval of the Agenda

2.1 There were no comments on the draft agenda which was accepted for the conduct of the meeting. The agenda and the list of documents submitted for discussion are given at Annexes 3 and 4 respectively.

3. Presentation of a Report by Each Country on the Loran-C/Chayka Programme.

3.1 During the past year the operation and control of the chains operated by China **(CS 14/3/1)** have been further strengthened. In particular:

- The system operation has been improved;
- The system management has been strengthened by antenna overhaul and base insulator replacement in Chain E and enhancement of technical training;
- New Loran-C monitor and control sub-systems have been installed and put into operation;
- Synchronised monitor sub-systems have been replaced in chains E and F, some time-frequency sub-systems will be replaced by the end of 2005 and TOE synchronisation will be put on trial operation for increased control accuracy.

Information was also given on the actual scheduled and unscheduled off-air details for the past year.

3.2 The operational status of the North West Pacific Chain during the past year was described by Japan **(CS 14/3/2).** Information was provided on the scheduled and unscheduled off-air periods, the signal availability of each station in the chain and the availability of each baseline.

3.3 The status of Loran-C stations of the Korean Chain was given in **CS 14/3/3**. The availability of each station over the last twelve months of operation was at least 99.54% and the availability of the chain was 98.84%. It was noted that this represented a slight increase in availability over the preceding year.

The non availability of the Ussuriisk station was noted in the report. It was recognised that the station had been testing signals with normal and Loran-C mode during the period 19 September to 2 October and the hope was expressed that the station would begin normal operations in the near future.

The Council requested Russia to complete the replacement of the Control & Synchronization Equipment at the Alexandrovsk-Sakhalinski and Ussuriisk stations urgently and provide normal operation in Chain C in 2006.

3.4 An analysis by Russia **(CS 14/3/4)** has shown that the Petropavlovsk-Kamchatski, Alexandrovsk-Sakhalinski and Ussuriisk stations in the (Russian-America Chayka/Loran-C) RAC chain an availability of 99.99%. This availability was based on unscheduled off-air time only because the methodology adopted in the RAC did not include the maintenance time of the stations.

4 Operational matters for FERNS co-operating chains.

4.1 Scheduled Off-air for 2006

4.1.1 **CS 14/4/1** contains a draft Off-Air schedule for 2006. The information contained in the document relating to stations in China, Korea, Japan and Russia was given in **CS 14/4/2**, **CS 14/4/3**, **CS 14/4/4** and **CS 14/4/11** respectively. Russia said that the Odhotsk station will operate on request by users.

China was invited to take over the off-air scheduled for 2006 and, using document CS 14/4/1 as a draft, send out the final schedule to members by the end of November 2005. To assist China members were requested to ensure that any changes to their proposals for off-air periods in 2006 are notified to China without delay.

4.2 Revision of FERNS Operating Guidelines

4.2.1 China **(CS 14/4/5)** proposed that the name of the station "Hexian" on pages 18, 19 and 29 be changed to "Hezhou". After some discussion on whether this proposed change also implied that an amendment was needed to the Intergovernmental Agreement of December 2000 the Council agreed that this was not necessary, and adopted the amendments with the footnote "* In the locality of Hexian" relating to Hezhou being added on all three pages.

4.2.2 Japan **(CS 14/4/6)** proposed changes to pages 18, 19, 21, 23 and 25 resulting from a reorganisation of the Japan Coast Guard. The Council adopted the amendments proposed.

4.2.3 Korea informed the Council **(CS 14/4/7)** of changes that had taken place to the e-mail address of the Pohang Control station and the telephone and fax numbers of the MOMAF office. Consequently appropriate amendments were proposed to pages 18, 23 and 25 of the FERNS Operating Guidelines. The Council adopted the amendments proposed.

4.2.4 Russia informed the Council that some changes to the telephone numbers of IRTC had taken place and that an e-mail address was now available. The Council agreed that these changes should be incorporated in the Operating Guidelines.

4.2.5 The amendments to Part 4 and Annex 1.2 of the FERNS Operating Guidelines adopted at this session were provided to participants during the meeting. Members were requested to amend their copies of the Guidelines accordingly.

4.3 Communication between Chiba C/C and Pohang C/C

4.3.1 In document CS 14/4/9 Japan informed the Council of the progress being made in the discussions with Korea about the review and improvement on the current private communication circuit between Chiba C/C and Pohang C/C.

Japan is currently reviewing again the effective and economical communication system in conjunction with a plan received from MOMAF and will prepare a report for consideration by the 15th FERNS Council session.

4.3.2 Korea reported (CS 14/4/10) that extensive work on the economics and technological feasibility of the proposal by Japan had been conducted and comments made in late September. A response from Japan is awaited.

4.3.3 Japan and Korea both agreed that the discussion on this matter will continue. The Council therefore noted the two reports and that a further report will be made to its next meeting.

4.4 Other Operational Matters

4.4.1 Korea reported, **(CS 14/4/8)** that a plan has been developed to transfer the duty of administrative work with the controlling authority of the Korean Loran-C Chain to MOMAF DGPS Central Office.

Initially the control equipment and communication network system will be transferred from Pohang station to MOMAF DGPS central office (Daejeon). Subsequently the jurisdiction of the Loran-C transmitting stations will be transferred to MOMAF DGPS central office.

The Council, noting that Article 3 (5) of the December 2000 Intergovernmental Agreement states that the "Composition and functional purpose of stations of a cooperating chain may be changed in accordance with the decisions of the Council" approved the change unanimously.

5. Technical matters for FERNS co-operating chains.

5.1 To enable the Chinese Loran-C system to continue to provide a qualified radio position service and to be considered as a suitable system to complement, provide back up and enhance GNSS, China reported **(CS 14/5/1)** that a number of measures had been taken to improve positioning accuracy, coverage and reliability.

These measures include:

- The development of a second-generation time-frequency sub –system (TFS) to improve performance and reliability;
- The development of a new synchronisation monitor sub-system that will enable transition from SAM to compatible TOE/SAM for chain control.

China also reported that a test of transmitting correction data in EUROFIX modulation had been completed. The results demonstrated that Chinese Loran-C stations can broadcast related information using EUROFIX technology.

5.2 With regard to the Working Group on "FERNS Co-operating Chain Improvement Plan" set up by the 12th Council Meeting, Korea notified the Council **(CS 14/5/2)** that the Chairman, Prof. Lee Duck-Soo and Mr Park Jae-Hyun, the Korean contact point, are unable to continue with this work.

MOMAF therefore appointed Mr. Lee Seung-Jae as the new Korean contact point and has proposed Prof. Gug Seung-Gi to be the new chairman of the Working Group. This proposal was supported unanimously by the Council and Prof. Gug Seung-Gi was therefore appointed Chairman of the Working Group.

In accepting the position Prof. Gug Seung-Gi expressed his appreciation for the honour that had been bestowed upon him and said he was certain that members of the Working Group would cooperate with him fully and that he would ensure, as far as possible, that the work of the Group is undertaken as thoroughly and expeditiously as possible.

Japan informed the Council that the contact point for his country is now Mr. Kiyoshi Iwamoto. Members were invited to keep the Chairman of the Working Group informed of any changes to their contact point.

Russia proposed that the WG on "FERNS Co-operating Chains Improvement Plan" be invited to consider the following matters and provide a progress report to the 15th Session of the FERNS Council:

- The development and certification of user equipment for Chayka and Loran-C radionavigation systems, GPS, GLONASS, GALILEO satellite navigation systems and transmission of DGNSS corrections on the radio beacon frequency band, including integrated user equipment for these systems; and,
- The development of documentation (including standards) on the operation and use of radionavigation systems and user equipment, paying special attention to harmonization of national and international standards.

There was some discussion on the Russian proposal and it was decided that the Working Group should consider the extent to which the proposal is already covered by its terms of reference as decided at the 12th session of the Council. It was also suggested that each country be

encouraged to exchange detailed technical information between their appropriate national organisations.

A proposal was also made to delete study of the international introduction of AIS from the work programme of the Working Group. It was agreed that this proposal should also be considered by the Working Group.

5.3 **CS 14/5/3** describes the problems experienced by Korea in monitoring the Pohang transmitting station with its dual role of master station of the Korea Loran-C Chain and secondary station of the North West Pacific Chain. The document also describes how the problem was overcome and the availability of the chains increased by the development of a real-time monitoring system for the station.

5.4 Japan expressed concern **(CS 14/5/4)** about the large positioning error in Japanese waters from the Alexandrovsk – Tokachibuto base line of the Russia chain. Although this error would be prevented by inverting the phase of the Chayka signals the necessary action has not yet been taken by Russia.

At present the Tokachibuto station transmits continuously for testing and adjustment purposes, however for economic and rationality reasons, consideration is being given to interrupting these transmissions except when suitable Loran-C transmissions are made from Alexandrovsk for testing or experimental purposes. Japan is fully prepared to co-operate in any future testing or experimental work.

In response Russia informed the Council that a programme of testing is being implemented and this should be completed by the end of 2005. Appropriate equipment is scheduled for the beginning of 2006 and subject to the satisfactory completion of operational testing and evaluation, based on the collected data and measurement results from Korea and Japan, the transmission of normal mode signals will be introduced.

Replying to a question about the difference between the Loran-C and Chayka signal format and the effect this has on positional accuracy, Russia said that the technology used in the Russian/American Loran-C/Chayka Chain (RAC) had overcome such problems.

The Council requested Russia to complete early in 2006 the experiments on evaluation of the work of the Chayka and Loran-C user equipment in Chains B and C in cooperation with Japan and Korea; and to specify the Loran-C mode of operation of the Russian and Japanese stations in Chain B.

5.5 A comparison of various formats for transferring reference data by transmitting stations of Loran-C/Chayka systems was described by Russia **(CS 14/5/5).** The comparison indicated that EUROFIX has had detailed theoretical study and intensive validation has been performed which mainly confirmed the theoretical results. However, the low effective rate of data exchange is a main limitation of this system.

The document describes the procedure used for the analysis and the results that were obtained.

5.6 Information on the current status and prospects of the modernization of the Chayka system in Russia was given to the Council **(CS 14/5/6)**. The programme is a stage by stage replacement of out dated components with new equipment designed to maintain continuous operation of stations with improved reliability and to introduce the capability to enhance the functions of terrestrial-based radionavigation systems to provide the possibility of integration with Global Navigation Satellite Systems (GNSS).

The information given in the document included the objectives of the concept of integrating terrestrial and space-based radionavigation systems, the technical developments of Chayka equipment that have taken place and the important problems that remain to be resolved.

5.7 The results of the test trials of FERNS joint Loran-C/Chayka Chains B and C were presented by Russia **(CS 14/5/7).** The tests included a comparative analysis of the RF pulse parameters of the Chayka transmissions and the Japanese and Korean Loran-C transmissions.

The purpose of the investigations, the equipment used, the parameters to be estimated and the investigation conditions were described in the document and the results of the investigation were given in detail.

Following the presentation there was a long discussion about the trials, during which Korea informed the Council of the results of its reception of test signals from the Ussuriisk station. Particular concern was expressed about the variations in output power of the Chayka transmissions as monitored at stations in Japan and Korea. In response Russia indicated that a low power mini-Chayka station had been used during the trials on a temporary basis.

Japan notified the Council that it has not confirmed the Loran-C mode signal in Chain B and requested Russia to send the data of the receiving conditions and the transmitting status as soon as possible. Japan stated that it has no intention of inverting the Loran-C signals of the Tokachibuto Station.

6 Co-ordination of other radionavigation services in the Far East.

6.1 AIS Services

6.1.1 The Council was informed of the configuration of AIS stations in China **(CS 14/6/1).** The task of establishing an AIS network along the coast of China began in 2003, by 2004 15 stations had been set up and trials over a period of one year demonstrated that the systems are stable and reliable.

Currently a further 35 stations are under construction and are scheduled for completion by the end of 2005 or early in 2006. After the 50 stations are in operation the total area coverage will be investigated and further stations added as necessary. Preliminary studies indicate that between 20 and 30 extra shore stations will be needed to meet the operational requirements.

The management of the China AIS network is divided into two levels, that is, local and regional centres.

6.1.2 Information was provided by Japan **(CS 14/6/2)** of the current and planned information services being provided through AIS. Three Traffic Advisory Service centres have been in operation since 1st July 2005 and a further two are scheduled to begin service in 2006.

6.1.3 As a result of the carriage of AIS equipment being made mandatory by IMO for ships to which the 1974 SOLAS Convention applies, Korea informed the Council **(CS 14/6/3)** of the national requirements implemented for non-SOLAS vessels.

Information was also given on the arrangements made by Korea to implement a nationwide AIS network between the General Information Centre on maritime Safety and Security and local AIS Operation centres. 22 AIS stations have been established including 12 VTS Centres that are facilitated with AIS.

A presentation was given on the concept of an overall safety and security concept involving ship

monitoring in local, coastal and ocean waters and long range reporting. Korea agreed to make every effort to repeat the presentation at an IALA Seminar in Kuala Lumpar on long range identification and tracking during the period 9 – 12 November 2005, as requested by Mr. Kruuse.

Prof. Gug Seung Gi gave information on activities at KMU on the use of AIS as an Aid to Navigation. China, Japan, Russia and IALA expressed an interest in this development.

6.2 DGPS and DGNSS Services

6.2.1 China reported **(CS 14/6/4)** that a marine DGPS system consisting of 20 reference stations has been established. The system positioning accuracy is better than 5 meters and signal coverage is approximately 300 km radius. Feedback from users indicated that most are satisfied with the service being provided.

Referring to section 6.2 of the Report of the 13th session of the FERNS Council, the document informed the meeting that:

- China has no plan to close its marine DGPS;
- The Chinese marine DGNSS will operate for a relatively long period; and,
- Compatible DGNSS (GPS, GLONASS and Galileo compatible differential) is under evaluation.

A feasibility study is taking place into the establishment of control centre/centres, some new reference stations and remote monitor stations.

6.2.2 Korea reported **(CS 14/6/5)** that 11 marine DGPS Reference stations and 9 monitoring stations had been constructed during the period 1998 to 2002 and are operating normally. In addition, Muju and Youngju stations were completed and made operational for land coverage in 2004 and plans have been made to construct Reference Stations at Pyeongchang and Chungju in 2006 and Seongju and Chuncheon in 2007 to complete full marine and land coverage.

Information was also provided on the availability of the maritime DGPS stations for 2004 as well as the coverage provided by the Korean DGPS Service.

6.2.3 Information on the Russian radio beacons operating in the frequency band 283.5 to 315.0 kHz was given in document **CS 14/6/6** to assist in coordinating the use of the band. Taking into consideration that Russia plans to begin a full-scale deployment of differential stations on its Pacific coastline in 2007, it proposed that the procedure for coordinating the national plans of FERNS members for the introduction and operation of DGNSS stations be developed during 2006.

6.2.4 A paper addressing the coordination of the frequencies used by FERNS members for DGNSS stations was submitted by Korea **(CS 14/6/7)** for consideration. The paper provided a comprehensive listing of the information provided previously by FERNS members of the names, locations and frequencies used for DGNSS purposes in their countries. The frequencies where mutual interference is possible were highlighted in the list.

The Council requested the Working Group (see section 5.2) to investigate those frequencies on which DGNSS stations in two or more FERNS countries are transmitting, assess the probability of mutual interference being caused and, if it is considered that significant mutual interference would be caused, propose remedial actions that could be taken. The study should take into account any reports by DGNSS users on mutual interference being experienced.

The Working Group was requested to report the outcome of the study to the 15th session of the Council.

7. Any other business.

7.1 Russia **(CS 14/7/1)** informed the Council of the completion of the development of an integrated navigation receiver operating from signals of GLONASS/GPS satellite navigation systems, Loran-C and Chayka terrestrial-based systems and from medium-wave marine radio beacons

The equipment has been developed for the navigation support of marine vessels when sailing in open sea, coastal regions and restricted waters. It is also suitable for high precision/velocity determination of land vehicles. Currently laboratory testing is taking place with the intention of conducting tests on board a marine vessel at the end of 2005. It is anticipated that commercial equipment will be available in 2006.

In response to a question it was explained that the preliminary cost of commercial equipment is expected to in the order of US$ 4,000. The final cost will be set after serial production starts and will depend on the volume of order. Although the specification of E-Loran signals is not yet known, there should not be a problem of compatibility with the equipment because the system can be adjusted to deal with any input signal

7.2 Prof. Gug Seung-Gi reported:

- On the 34th ILA Annual Convention held in the United States during the period 17-19 October 2005; and,
- The initial trials carried out by KMU on the use of AIS as an Aid to Navigation and how it can indicate the operational status of aids to mariners.

7.3 Closure of the NELS organisation

The Chairman informed the Council that he had received a letter from Mrs Kirsten Ullbæk Selvig about the closure of the NELS organisation on 31st December 2005.

A copy of the letter is given in Annex 5

8. Date and venue of the 15th session.

8.1 At the invitation of the China (**CS 14/8/1**) it was agreed that the 15th session of the Council will be convened in China in October 2006. China Maritime Safety Administration will determine the venue and specific dates for the meeting and inform members of FERNS not later than 30th June 2006.

9. Closing of the session.

9.1 The Council reviewed the draft report of the 14th session and adopted it with amendments. The final report is given in Document **CS14/9/1**.

9.2 The Council expressed its great appreciation to the Ministry of Maritime Affairs and Fisheries of the Republic of Korea for the excellent arrangements made for the meeting, the hospitality that had been shown to all participants and the very interesting visits to Udo Lighthouse and Jeju Folklore Museum that were undertaken.

9.3 The Chairman extended his appreciation to all the delegates for the hard work, mutual understanding and co-operation that has contributed to the success of FERNS in general and to this session of the Council in particular.

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Annex 1

Welcome address by Mr Lee Jang Woo

Honorable Secretary General of IALA Mr. Torsten Kruuse, on behalf of MOMAF (Ministry of Maritime Affairs & Fisheries) I would like to express my deepest appreciation to the members of FERNS (Far East Radionavigation Service) Council for visiting Jeju island, also known as the island of peace.

Allow me to introduce myself before we begin the 14th Session of the Council of the FERNS. I am Mr. Lee Jang Woo, Director of the Aids to Navigation Division, Maritime Safety Management Office of MOMAF. I have been in this position since Feb. 14 this year. I have previously been working at other divisions of the Ministry including Jeju & Gunsan's Regional Maritime Affairs and Fisheries Offices where I served as the Director General, as well as the maritime disaster prevention office.

Ever since its inception, FERNS has made incremental and substantial development each year. In particular, it has continuously contributed to the safety of marine transportation amongst adjacent counties through cooperation not only in the area of Loran-C/Chayka programme but also in other areas of radionavigation.

The global radionavigation system is developed to take another leap forward with the introduction of modernization GPS and Galileo system. Also, with further enhancement in its functions, Loran-C is expected to provide better services as a reliable back-up system for GNSS.

Today, a growing number of countries around the globe are establishing DGNSS to ensure greater safety in marine transportation by providing more accurate positional information. Accordingly, the Council formed a working group on "FERNS Chain Improvement Plan" to deal with the subject.

I hope the Council will serve as an avenue for enhanced mutual understanding and cooperation not only in terms of Loran-C/Chayka radionavigation but also in various state-of-the art aids to navigation for better maritime safety in the Far East Asia region.

I also hope that the 14th Session will further promote cooperation & friendship among member countries.

Please note that Dr. Chung Il Young, Director General of Maritime safety management office of MOMAF was scheduled to participate in the opening ceremony to deliver his welcoming address, but unfortunately he was tied down by urgent duties. He will be joining us for the welcome reception tonight.

Once again, I hope you enjoy your stay in Korea. Now I declare the opening of the 14th Session of the Council of FERNS.

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Annex 2

LIST OF PARTICIPANTS

China	Mr. Han Wei	Director. Division of AtoN and Hydrography, China Marine Safety Administration
	Mr. Ma Jianshe	Deputy Director, Science and Technology Center of AtoN and Hydrography, Tianjin MSA
	Mr. Liu Zhihao	Senior Engineer, China Maritime Safety Administration
	Mr. Xu Chunming	Senior Engineer, China Maritime Safety Administration
	Mr, Li Yue	President, Xi'an Research Institute of Navigation Technology
Japan	Mr. Koji Mimura	Director, AtoN Management Division, Maritime Traffic Department, JCG
	Mr Masashiro Takano	Senior Engineering Officer, AtoN engineering Division, JCG
Russia	Mr. Victor Tsarev	Director, Internavigation RTC
	Mr. Vadim Zholnerov	Deputy Director, Russian Institute of Radionavigation and Time
	Mr. Anatoly Argunov	Deputy Director, Internavigation RTC
	Mrs. Elena Tsikalova	Chief Division, Internavigation RTC
IALA	Mr. Torsten Kruuse	Secretary General
	Mr. Peter Kent	Technical Representative
Korea	Mr. Chung Il-Young	Director-General, Marine Safety Management Office, MOMAF
	Mr. Lee Jang-Woo	Director, AtoN Division, Marine Safety Management Office, MOMAF
	Mr. Ahn Hong-Ryeol	Deputy Director, AtoN Division, Marine Safety Management Office, MOMAF
	Mr. Lee Seung-Jae	Assistant Director, AtoN Division, Marine Safety Management Office, MOMAF
	Prof. Gug Seung-Gi	Professor, Department of Maritime Police Science, KMU.
	Prof. Chung Se-Mo	Professor, KMU

Annex 3

Agenda

1. Opening of the session.
2. Adoption of the agenda.
3. Presentation of reports by each country on the Loran-C/Chayka programme.
4. Operational matters for FERNS co-operating chains.
5. Technical matters for FERNS co-operating chains.
6. Co-ordination of other radionavigation services in the Far East.
7. Any other business.
8. Date and venue of the 15th session.
9. Closing of the session.

Annex 4

List of Documents

Document No.	Description	Country
CS 14/3/1	Country Report	China
CS 14/3/2	Operational status of the North West Pacific Chain	Japan
CS 14/3/3	Presentation of Report by each country on the Loran-C/Chayka Programme	Korea
CS 14/3/4	Report on the operation results of the RF RN stations in the RAC and chains B & C	Russia
CS 14/4/1	Plan for the FERNS Scheduled Off-air in 2006	Korea
CS 14/4/2	Scheduled Off-air in 2006	China
CS 14/4/3	2006 FERNS Scheduled Off-air	Japan
CS 14/4/4	Plan for the Korea Chain Scheduled Off-air in 2006	Korea
CS 14/4/5	Revision of FERNS Operating Guidelines	China
CS 14/4/6	Revision of FERNS Operating Guidelines	Japan
CS 14/4/7	Revision of FERNS Operating Guidelines	Korea
CS 14/4/8	Transferring Control Station of Korea Loran-C Chain	Korea
CS 14/4/9	Interim report on the review of private communication circuit between Chiba C/C and Pohang C/C	Japan
CS 14/4/10	Improvement of the Korea-Japan Control Station Communication Circuits	Korea
CS 14/4/11	Scheduled maintenance off-air periods of the Russian stations in 2006	Russia
CS 14/5/1	Technical update	China
CS 14/5/2	FERNS Co-operating Chain Improvement Plan	Korea
CS 14/5/3	Development of Loran-C Timing Monitoring System	Korea
CS 14/5/4	Accuracy improvement of Russia chain (7950)	Japan
CS 14/5/5	Comparison of various formats for transferring the reference data by transmitting stations of Loran-C/Chayka systems	Russia
CS 14/5/6	Modernization of Chayka system in Russia. Current status and prospects	Russia
CS 14/5/7	Results of test trials of the joint RNS (chain B & C)	Russia
CS 14/6/1	Configuration of China AIS	China
CS 14/6/2	Information Services through AIS in Japan	Japan
CS 14/6/3	Universal Automatic Identification System	Korea
CS 14/6/4	Chinese Marine DGPS	China
CS 14/6/5	NDGPS Construction and availability in 2004	Korea
CS 14/6/6	Co-ordination of the RN Frequency Band 283.5-315.0 kHz for the Far East Maritime Area	Russia
CS 14/6/7	Co-ordination of the frequency revisio0n for DGNSS stations	Korea
CS 14/7/1	Integrated Navigation equipment operating from signals of GLONASS/GPS/Loran-C/Chayka/MW radio beacons	Russia
CS 14/7/2	Report on ILA 34th Convention	Korea
CS 14/8/1	Date and Venue of the 15th Session	China
CS 14/9/1	Report of the 14th Session of the FERNS Council	

Annex 5

Letter from Mrs Kirsten Ullbæk Selvig

Mr. Lee Jang-Woo

Your ref. Our ref. 200300724- /ILS Date 29 OKT 2005

14 session FERNS council – Statement from NELS

I sincerely regret not being able to participate at the 14. FERNS council in Jeju, South Korea, but I wish you all a successful meeting.

NELS has published a statement on the future of the NELS organisation:

"The Northwest European Loran-C system organization (NELS) will be discontinued on 1 January 2006.

The Loran-C signal will however remain available in part of the present coverage area in Europe. Further clarification on this will be provided in a notice that will be issued in December 2005.

In the meantime accounts receivable must be in our possession within 1 December 2005. All claims after this date will not be considered.

The NELS website http://www.nels.org will be updated until its closure on the 31 December 2005,

The Norwegian Government has decided to close down the Norwegian Loran-C stations: Berlevāg, Bø, Værlandet and Jan Mayen.
These 4 stations will be taken off air on the 5. January 2006 12.00 UTC time.

The German Loran-C station at Sylt will go off air on the 1 January 2006 00.00 UTC time.

The Danish Loran-C station at Ejde will go off air on the 31. December 2005 24:00 UTC time.

Further information concerning the remaining Loran-C stations in Europe, please contact Mr. Jacques Manchard, Head of the Directorate for Maritime Affairs and Aid to Navigation
Phone +33 1 44 49 86 81.
E-mail: Jacques.Manchard@equipement.gouv.fr

Kirsten Ullbæk Selvig
Chairman NELS Steering Committee"

I would like to add that France is negotiating with Denmark on the possible continuation of the Edje station beyond 2005. Department of Transport in United Kingdom has also approached Norway in the question of further use of existing Norwegian Loran-C stations. There are also discussions going on between England and France on this subject.

Yours Sincerely

Kirsten Ullbæk Selvig

Director General/Chairman NELS

Inger-Lise Sogstad
Adviser