



ORGANIZACION HIDROGRAFICA INTERNACIONAL

Dossier del BHI No. S1/1810

**CIRCULAR No. 23/2008
28 de Febrero del 2008.**

**RESPUESTA DEL BHI A UN ARTICULO EN "DIGITAL SHIP"
RELATIVO A JEPPESEN MARINE**

Estimado(a) Director(a),

1. El Comité Directivo ha sabido, por un informe publicado en la edición de Marzo de "Digital Ship", que Jeppesen Marine sugiere que los Buques Hidrográficos se mantengan fuera del sector comercial para dedicarse enteramente a la producción de datos hidrográficos, dejando a los proveedores comerciales la producción de cartas y publicaciones náuticas a partir de esos datos. El Director de Jeppesen Marine para Asuntos y Servicios relacionados con la Seguridad de la Industria Marítima ha confirmado, en efecto, en un correo electrónico enviado al Presidente del BHI, las opiniones expresadas en dicho artículo.

2. Se adjunta a esta Circular una copia del artículo de "Digital Ship" para su información. Está disponible en el siguiente sitio Web:

<http://www.thedigitalship.com/DSmagazine/DigitShipMar08.pdf>

3. Dada la naturaleza del artículo y de su mensaje, el Comité Directivo ha considerado que era importante proporcionar al editor de "Digital Ship" una declaración ilustrada de la OHI sobre este tema, para poder dar una perspectiva equilibrada. Como resultado, se envió el 26 de Febrero del 2008 un resumen explicativo de los diversos compromisos y obligaciones de los Servicios Hidrográficos nacionales al editor de "Digital Ship", en relación con el suministro de servicios hidrográficos. Se adjunta a esta Circular una copia de esta declaración como Anexo A.

4. El Comité Directivo seguirá de cerca esta situación.

En nombre del Comité Directivo
Atentamente,

Capitán de Navío Robert WARD
Director

Anexo A:- Declaración del BHI - *Obligaciones y Compromisos de los Servicios Hidrográficos Nacionales para el Suministro de Servicios Hidrográficos.*

Anexo 1: Extracto de "Digital Ship" de Marzo del 2008 - Páginas 27-29.

DECLARACION DEL BHI

Obligaciones y Compromisos de los Servicios Hidrográficos Nacionales para el Suministro de Servicios Hidrográficos

Un artículo publicado recientemente en “Digital Ship” indica que Jeppesen Marine (que se ha fusionado recientemente con C-Map) sugiere que los Servicios Hidrográficos nacionales, que son Autoridades Gubernamentales, se mantengan fuera del sector comercial, para dedicarse enteramente a la producción de datos hidrográficos, dejando a los proveedores comerciales la producción de cartas y publicaciones náuticas a partir de esos datos.

El suministro de servicios hidrográficos, que incluye los levantamientos hidrográficos, la producción de cartas y publicaciones náuticas, al igual que la difusión de Avisos a los Navegantes, es una obligación de los **gobiernos** en el marco del Derecho Internacional de los Tratados. La responsabilidad de este servicio público incumbe pues a los gobiernos y no puede transferirse directamente a los proveedores comerciales. Al mismo tiempo, el rol del sector comercial en el apoyo de estas responsabilidades gubernamentales mediante mecanismos de distribución y producción eficaces durante diferentes etapas, con una buena relación coste-eficacia, para productos náuticos oficiales está totalmente reconocido y está siendo utilizado cada vez más por los Servicios Hidrográficos del mundo entero.

Los hechos siguientes se refieren a estos temas.

El suministro de servicios hidrográficos, que incluye los levantamientos hidrográficos, la publicación de cartas náuticas, los libros de faros, las tablas de mareas y otras publicaciones náuticas, al igual que la difusión de los Avisos a los Navegantes, es obligación de los **gobiernos** en el marco del Derecho Internacional de los Tratados – en particular la Regla 9 del Capítulo V de SOLAS.

El Derecho Internacional de los Tratados atribuye de modo claro una obligación y una responsabilidad legales a los Gobiernos Contratantes, no sólo para la recogida de datos, sino también para la producción de cartas y publicaciones náuticas y para su mantenimiento y actualización posteriores. Estas son **obligaciones gubernamentales** que son llevadas a cabo por los Servicios Hidrográficos nacionales respectivos. No son tratadas separadamente porque están relacionadas entre ellas y son todas fundamentales para los intereses de los Estados Costeros en lo referente a la seguridad en el mar, la protección de la vida, la protección del medio ambiente marino, la seguridad marítima y la administración de las zonas costeras.

Es una responsabilidad primordial de los Estados Costeros asegurar la creación y la distribución de productos de navegación oficiales aprobados por los gobiernos en el entorno de SOLAS, antes que en el sector comercial. El rol del sector comercial es apoyar dicha actividad y seguir suministrando mecanismos de distribución eficaces y con una buena relación coste-eficacia para estos productos oficiales.

Obligaciones Gubernamentales en el marco del Derecho Internacional.

Los gobiernos se han puesto de acuerdo en las condiciones de los varios acuerdos, tratados, convenios y obligaciones internacionales relativos a hidrografía, cartografía náutica y a la seguridad de la navegación y la protección del medio ambiente marino. Por esto se conocen como Gobiernos Contratantes.

Los Servicios Hidrográficos recogen y administran datos hidrográficos, producen cartas y publicaciones náuticas y proporcionan un servicio de actualización en nombre de los Gobiernos Contratantes. Esto se hace para satisfacer las obligaciones del Derecho

Internacional de los Tratados de aquellos Gobiernos Contratantes. Los Servicios Hidrográficos han aceptado siempre la responsabilidad de sus cartas y servicios.

Los siguientes Convenios y Acuerdos Internacionales se refieren todos a cartas y publicaciones náuticas:

SOLAS V, Regla 9 – Suministro de Servicios Hidrográficos.

(Traducción del BHI)

Esta regla define explícitamente que los Gobiernos Contratantes deben:

- Asegurarse de que los **levantamientos hidrográficos** se llevan a cabo, en la medida de lo posible, para satisfacer las exigencias de una navegación segura;
- **Elaborar y publicar cartas náuticas, derroteros, libros de faros, tablas de mareas y otras publicaciones náuticas**, cuando corresponda, que respondan a las necesidades de una navegación segura;
- **Difundir los Avisos a los Navegantes** para que las cartas y publicaciones náuticas se mantengan actualizadas, en la medida de lo posible; y
- Proporcionar acuerdos de administración de datos para apoyar estos servicios.

También estipula que los Gobiernos Contratantes se comprometen a:

- Asegurar la mayor uniformidad posible en cartas y publicaciones náuticas;
- Tener en cuenta, siempre que sea posible, las **resoluciones y recomendaciones internacionales** (y en particular aquellas adoptadas por la OHI); y
- a coordinar sus actividades, en la medida de lo posible, para asegurarse de que la información hidrográfica y náutica esté disponible a escala mundial tan puntualmente, fidedignamente y poco ambiguamente como sea posible.

SOLAS V, Regla 2 – Definición de Carta Náutica y Publicaciones Náuticas.

(Traducción del BHI)

Esta regla define de forma clara la naturaleza de los productos que los Gobiernos Contratantes están obligados a proporcionar en el marco de la Regla 9. Indica que:

“ ... una carta náutica o una publicación náutica es una carta o un libro con un objetivo especial, o una base de datos especialmente compilada, a partir de la cual se establece una carta o un libro similar, que es publicado de manera oficial por o con la autoridad de un Servicio Hidrográfico autorizado por el Gobierno o por otra institución gubernamental competente y que ha sido concebido para satisfacer las exigencias de una navegación marítima”.

Esta regla hace referencia también, en una nota de pie de página, a resoluciones y recomendaciones de la OHI apropiadas relativas a la autoridad y a las responsabilidades de los Estados Costeros en el suministro de cartografía, de acuerdo con la Regla 9.

La Resolución A.958(23) de la Asamblea de la OMI, en el marco del suministro de servicios hidrográficos: “Invita a los **Gobiernos**, además de sus obligaciones existentes en el marco de la Regla V/9 de SOLAS, a promover a través de sus administraciones marítimas, el uso del ECDIS junto con el uso y la producción adicional de **cartas electrónicas oficiales (ENCs)**.”

La Resolución A/58/240 (2003) de la Asamblea de las NN.UU., en el marco del capítulo sobre los Océanos y la Ley del Mar, “invita a la OHI y a la OMI a continuar sus esfuerzos coordinados, para adoptar conjuntamente medidas con vistas a suscitar una cooperación y una coordinación internacionales mayores para la transición a las cartas electrónicas de navegación, y a aumentar la cobertura de información hidrográfica a nivel mundial, especialmente en las zonas de navegación internacional y en los puertos en los que hay zonas marítimas vulnerables o protegidas”.

El Artículo VIII.c de la Convención de la OHI encarga el Bureau Hidrográfico Internacional (BHI) que “favorece el intercambio de cartas y documentos náuticos entre Servicios Hidrográficos de Gobiernos Miembros”.

Implicación de la Industria.

Los 80 Estados Miembros de la OHI han reconocido la importancia de las varias partes asociadas (fabricantes de equipo, productores de programas, navegantes, operadores de buques, sociedades de clasificación, y otras) al contribuir al suministro de servicios hidrográficos y, especialmente, al contribuir a la implementación de ECDIS y a la producción de ENC.

La OHI convoca una reunión anual de dos días de duración, conocida como “Foro de las Partes Asociadas”, en la que se examinan todos los temas relativos al suministro de servicios hidrográficos. Organizaciones Internacionales no Gubernamentales (OINGs) y “colaboradores expertos” invitados participan también en el trabajo de varios organismos técnicos de la OHI, proporcionando su experiencia y conocimientos en el establecimiento de las mejores normas, procedimientos y prácticas en beneficio de los navegantes y la comunidad marítima.

Muchos de los “colaboradores expertos” de la OHI vienen de sociedades productoras de cartas comerciales, como Jeppesen, y proporcionan una valiosa contribución a la OHI en su rol de coordinadora de la actividad hidrográfica global y de la producción y el mantenimiento de normas internacionales de apoyo.

Los productores de cartas comerciales tienen niveles de competencia reconocidos, particularmente en lo que se refiere a la reproducción y la administración de los datos y productos existentes y verificados y proporcionan asistencia a algunos Servicios Hidrográficos, bajo contrato, para aspectos preliminares y de rutina de la producción de cartas; sin embargo, la selección de datos hidrográficos pertinentes, la validación del trabajo emprendido, así como la actualización de las cartas y la responsabilidad general de la carta constituyen una tarea sustancialmente diferente para la que se requieren los conocimientos y la experiencia de los Servicios Hidrográficos y, así pues, es correcto que esta tarea incumba al gobierno de origen de acuerdo con los principios anteriormente explicados.

Distribución de ENC.

Las ventas de los productos, la distribución y la disponibilidad de cartas son asuntos que deben establecer los Servicios Hidrográficos individuales y los gobiernos de los Estados Costeros y que son gobernados por las políticas y exigencias nacionales. El coste global del suministro de servicios hidrográficos es financiado ampliamente por los fondos públicos. Los ingresos de las ventas de cartas cubren sólo una pequeña parte de este gasto.

En lo que se refiere a las ENC, la OHI ha establecido un número de principios para ayudar a asegurar la coherencia en la producción y disponibilidad de ENC. Estos son los denominados Principios de la Base Mundial de Datos de ENC (WEND) aprobados por los Estados Miembros de la OHI. Uno de los Principios WEND anima a los Servicios Hidrográficos a hacer que sus ENC estén disponibles para los minoristas a través de Centros Regionales de Coordinación de ENC o RENC. Actualmente hay dos RENC principales - el IC-ENC basado en el RU y dirigido por el SH del RU y Primar, basado en Noruega y dirigido

por el SHN. El IC-ENC tiene un subcentro en Australasia, basado en Australia y dirigido por el Servicio Hidrográfico Australiano.

Los RENCs son organizaciones no lucrativas que constituyen centros de distribución únicos para que los minoristas obtengan ENCs a precios de mayorista. Los RENCs no comercializan ni venden directamente al público. Esto se hace a través de minoristas; uno de ellos es Jeppesen Marine.

Los RENCs son mayoristas de ENCs, que actúan en nombre de los Servicios Hidrográficos contribuyentes. Han sido establecidos para ayudar a asegurar la coherencia y disponibilidad de ENCs y los servicios de actualización asociados a las mismas. No están implicados en las ventas directas ni están compitiendo con un mercado de distribución de cartas en sus diferentes etapas. El precio de mayorista de las ENCs disponibles a través de los RENCs está dictado por los gobiernos de los Servicios Hidrográficos participantes.

Los RENCs están gobernados por Juntas de Administración compuestas por representantes de los Servicios Hidrográficos nacionales participantes.

Algunos Servicios Hidrográficos no distribuyen sus ENCs a través de los RENCs. Las ponen a disposición de los usuarios finales directamente o a través de minoristas, del mismo modo que han estado siempre disponibles las cartas de papel y otras publicaciones náuticas.

El ritmo acelerado de producción de las ENCs oficiales ha sido reconocido por muchas partes asociadas del sector marítimo, incluyendo las administraciones de la seguridad, los navegantes y las sociedades de clasificación, que aceptan también que la cobertura de ENCs en algunas partes del mundo sea ya adecuada. Durante la Conferencia de la OHI de Abril del 2007, los Estados Miembros renovaron su compromiso con la producción de ENCs y decidieron llevar a cabo una cobertura, una disponibilidad, una coherencia y una calidad de ENCs adecuadas antes del 2010. Todo parece indicar que esto se llevará a cabo.

Jeppesen to HOs - 'cease commercial operations'

Jeppesen Marine, a subsidiary of the Boeing company that acquired maritime chart company C-Map in 2007, has released a 'manifesto' of corporate opinions that calls for government bodies to 'cease commercial operations' - a move that is sure to rattle the cages of the Hydrographic Offices.
Digital Ship spoke to Tor Svanes and Tim Sukle, Jeppesen Marine

Jeppesen Marine has marked the first anniversary of its acquisition of Norwegian chart provider C-Map by releasing a list of four corporate 'opinions', a controversial grouping of in-house strategy and changes that the company would like to see in the market.

The cornerstone of this 'Jeppesen manifesto', likely to rattle the cages of the commercially active Hydrographic Offices, is the statement: "Governments must focus their energies (all of it) on the creation of new navigation content, and let commercial industry compete to create products that drive customer value."

As a background to this statement, Tim Sukle, senior vice president and general manager at Jeppesen Marine, explained how he believes the company's status as a subsidiary of the massive Jeppesen organisation can create commercial advantages that could benefit the market.

Jeppesen is the world leader in the production of navigational charts for use in aviation, and it is this expertise that the

company hopes to bring to bear in the shipping sector.

"Our core competency at Jeppesen is the global management and distribution of information," he told us.

"We're pretty proud of this, we've spent seventy years just about on it, and continue to invest hundreds of millions of dollars annually on the technology to maintain all of the processes and the quality management systems and tools that underlay what we do for a living."

Jeppesen counts over 1 million pilots and mariners as users of its services, which Mr Sukle says can be found onboard nearly all of the airlines of the world and over 20,000 commercial shipping vessels.

"Our system today is capable of adjusting to over 250,000 changes in a single week, transported to a million customers' systems that same week - we can ingest a change from a sovereign government as late as Wednesday afternoon and have that onboard operators' systems by

Friday," he said.

Jeppesen is also strengthened further by its status as a subsidiary of the Boeing company.

"This allows us to reach into the Boeing system and gain access to the tremendous amount of research and development that goes on within Boeing," said Mr Sukle. "These guys are, right now, helping us on the marine side to develop some advanced routing and guidance technology, and with large scale systems integration."

ENCs

On the maritime side, the company is focused on the creation and delivery of digital charts for the commercial sector, carrying on from where C-Map left off, but taking advantage of the added resources of its new parent.

"Over the years our business has changed," explained Tor Svanes, division director, commercial navigation, Jeppesen Norway.

"We provide tools and services to help

Hydrographic Offices (HOs) create Electronic Navigational Charts (ENCs) and also paper charts. Those become official sources (of navigation data), created through Jeppesen systems."

"Our own database, the C-Map Professional database, is the data that we produce ourselves based on different sources. That is kept updated and it has ISO certification."

"We get information from different sources in the industry, maritime organisations, Hydrographic Offices, the RENC that are collecting ENCs from different countries, Met Offices. So it's not only ENCs or our own database anymore, it's a lot of information and a lot of services."

He continued: "In the beginning, 15 years ago, it was about the sale of data, today we're moving towards the subscription of data. 95 per cent of the business with data today is subscription on a regular basis."

"We look at it that we have this channel between us and the consumer, and want

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The amount of content created has to go up greatly from the governments, that's where their energies should be focused - Tor Sukle, Jeppesen Marine

to see how we can serve the customer better with that."

It is in the ENC market that the most contentious issues lie. ENCs are official charts, that are legally allowed to be used for navigation. Other digital sources, such as Jeppesen's own database previously mentioned, may only be used as an aid in conjunction with an official chart, be that paper or electronic.

"ENCs, by definition, are electronic charts produced and stamped by a Hydrographic Office, but with that I would like to add that Jeppesen has probably been involved in producing more than 50 per cent of ENCs on the market today," said Mr Svanes.

"We are producing ENCs for the Hydrographic Offices, based on different sources, and supply technology to them, production systems to them, and train their people. So a lot of the ENCs available have been within Jeppesen one way or another."

"What we do with ENCs we get from the Hydrographic Offices, we put it onto a separate DVD that has SENC format distribution, and do seamless merging with our own data, so there are no open areas on the screen."

The electronic nature of these products has changed the game, as it were, compared to navigating by paper chart. New charts can be transmitted and added to an onboard portfolio almost instantaneously over the satellite communications system.

"Real-time updating is one of the most important things now, as I said, the main business for us now is in subscriptions

with the vessels and for that they need a real time update service," said Mr Svanes.

"There's a very sophisticated system to keep all of these charts updated. That's very important with the ENCs, because many of the Hydrographic Offices don't give incremental updates, they just give you a new file. If you're going to transfer all of these files in an open S-57 or S-53 format it's going to cost you a fortune over the satellite. We send compressed data in incremental updates."

"Then we have the issue of dynamic licensing. This had to be developed because the market said 'ENCs are too expensive, we cannot buy them.'"

Dynamic licensing is a system whereby a vessel operator only pays for the use of the ENCs they actually use. The charts are stored onboard the ship, but only incur a charge once they are opened and used.

"We actually had one customer coming in, they said 'I need to have ENCs of the whole world,'" said Mr Svanes. "We said 'are you sure?', and he said 'yes, I normally use ENCs.'"

"We gave him a quotation, and it was \$98,000 per year. He came back and said 'I'll start with the Mediterranean'. So pricing is an important issue, and with this dynamic licensing it's a service where you can 'pay as you go.'"

Data formats

One aspect of the distribution service that Jeppesen feels is of particular benefit to users of its products is the conversion of encrypted ENC data into a usable format, which it completes at its offices before sending the charts out to its customers.

"It's something that people sometimes have difficulty understanding, but when you get an ENC from an official source on a DVD it is encrypted with something called S-63, so when you get it you have to get a licence to open it up," Mr Svanes told us.

"When you put it into the ECDIS (electronic chart display information system) you have to convert the data. If you subscribe to Northern Europe, let's say, that would probably take you six to eight hours to convert."

"This conversion we do in our office, because it's not only the time for the conversion itself it's also all of the errors you will get on the screen. There's the issue of harmonisation of data - the data in Singapore, the data in Japan, the data in Europe, they're not compiled in the same way. Then the ECDIS could say 'this is no good', and you'll get all of these error messages on the screen."

"We have, as of today, agreement with 98 manufacturers of ECDIS and ECS (electronic charts systems), that's probably 90 per cent of the world's companies that deal with this kind of thing, to use our format in their systems."

Manifesto

Already established in the maritime industry, through the C-Map brand, it seems, however, that Jeppesen is not entirely content with its position in the market, particularly with regard to the regulations governing the use of electronic data for navigation.

The company believes that there is a better way to organise the distribution of navigational charts in the modern era, though conveniently this new method would involve a decrease in the number of competitors Jeppesen would have to deal with.

"Things were much simpler in days gone by," said Mr Sukle. "If it was cloudy the sextant didn't work that well, as long as your lead line was long enough to reach the bottom the depth worked pretty well. People tended to stay within a local area more often than not, and you ended up with masters who were focused on the operation of the vessel."

commercial aviation. What this said was that if the maritime incident rate was applied to commercial aviation, we would experience 1.5 incidents every business day. What can we do about this?"

Jeppesen's publication of its 'corporate opinions' reflects its suggestions of how improvements could be made. The first of these, in particular, may be unpalatable to HOs that run commercial operations, such as the UKHO's Admiralty brand and the Primar company operated by the Norwegian Hydrographic Service.

"Opinion number one is that we believe that governments must focus their energies, all of it, on the creation of new navigation content, and let commercial industry compete to create products that drive customer value," said Mr Sukle.

"We find that in the collection of sovereign sources we still have areas where charts were created in the 1700s, with soundings, and we just don't think that's reasonably okay in this day and age. The amount of content created has to go up greatly from the governments, that's where their energies should be focused."

"On the product side, a free market economy is a better environment for creating products. If our products and services

'The turnover (the HOs) have by selling the data has nothing to do with the cost of surveying'

- Tor Svanes, Jeppesen Norway.

"If we look at what we face today, as an industry, we have many things now that become challenges that need a few more brain cells to be applied to come up with solutions. We have the highest oil prices in the history of the world, the information age is flooding everyone with information through Blackberrys, e-mail, and so on. Worldwide trade is a given, no longer can you survive in a local regional area."

He continued: "Our cross-industry view allows us to make comparisons, draw conclusions, and deploy capabilities and ideas that make sense from one industry to another."

"A study that was done by the state of Alaska almost 10 years after the Exxon Valdez incident in 1989 looked at incident rates in maritime and compared this with

don't directly add value to our customers we don't have a business. We have to compete with other people with investment, innovation and ideas, and that results in overall, better products and services being offered."

Mr Svanes continued: "About 20 years ago, we got money from the Norwegian research council to develop ECDIS, on the basis of promises from the Norwegian Hydrographic Office that they would create data for the ECDIS."

"That was 20 years ago. Now the Hydrographic community is saying the same things, 'if you implement mandatory ECDIS by 2012, we will make sure you have enough data'. Still there is no coverage. The issue here is, should industry be allowed to make the product?"

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Funding
Of course, were the HOs to cease commercial operations it would eliminate a revenue stream that is presumably used to partly fund the creation of the hydrographic data in the first place.

If that were the case these HOs would have to find some way to replace that money - and the two most likely options would be an unpopular additional burden on the taxpayer, or a possibly more unpopular extra charge for ENCs.

Mr Svanes argues that a

Digital Ship

move away from commercial activity on behalf of the HOs would not necessarily have to result in extra costs being passed on to other parties.

"The turnover they have by selling the data has nothing to do with the cost of surveying," he said.

"It's only really one main Hydrographic Office in the world that actually makes some sort of business out of this that is



"The obligation of the Hydrographic Offices is to provide safe information, and that's it - Tor Svanes, Jeppesen Norway"

worldwide. The other ones are domestic, and do it as a service. If they should base the charge for a paper chart on the cost of survey, each chart might cost \$1 million."

"The obligation of the Hydrographic Offices is to provide safe information, and that's it. That's the obligation they have from IMO and the UN. There's nothing said that the Hydrographic Office should create a business out of their products. Anyway, they are funded by the government. The money they make on whatever business they do, all others, except one, is close to zero."

Mr Svanes also contends that Jeppesen could increase the total volume of charts being sold in the market if it were given this opportunity, resulting in an increasing income for the HOs through royalty payments.

"They are still the owners of the data, they will still have royalties on the data," he said. "If the usage goes up, if the volume goes up, they will make more money."

"We started with a worldwide database in 1993, and the price was \$5,000. The price is still \$5,000, though the database is probably ten times bigger. This is economies of scale. We have the volume to keep that going, and with that we can pay for the infrastructure."

It would seem that, regardless of these funding issues, Jeppesen believes that the HOs have no business operating in the commercial arena and should leave that side of things to private industry.

"All of the countries have signed a paper with IMO and the UN that they have to provide this information," said Mr Svanes. "Why shouldn't this happen, when we have been waiting 20 years for the ENC's?"

When asked if this move was a direct challenge to UKHO in particular, Mr

Svanes replied: "We haven't mentioned the name, but I see they do look at us as a competitor. I find that very odd, that an authority is looking at private industry like that."

"I have never defined UKHO as a competitor, as long as we don't have the (official government) stamp we cannot compete on equal terms. If we had the stamp we could compete on equal terms."

"We have offered to the HOs to do data for them, the way we do it. We sell our services, our products, to the HOs. We have produced the whole portfolio of South Africa, the whole portfolio of Greece, of Columbia, of Iceland."

"I think the industry is better served by private companies doing products and services than the authorities. It's not going to happen tomorrow, but we have to start somewhere."

Mr Svanes also suggested that the influence of government authorities in the commercial sector can be detrimental when they are also involved in setting the regulations for the market.

"You can see what happens when the authorities are in control," he said. "In 1997 all of the HOs, and they have been the driver behind this all the time, forced, and I would say forced, IMO to implement raster charts in ECDIS."

"What happened with raster charts? Now they're going away again. For 10 years the industry has spent millions and millions of dollars to develop and implement raster technology, and it's never been accepted in the marketplace. That's not the way it should work."

Standards

The second 'opinion' in the Jeppesen manifesto relates to the use of standards in the maritime industry. Again, this is another area where the company feels HOs should stay out, and allow private companies to take control.

"Opinion number two is that, in the technology age, precise harmonisation of standards is essential," said Mr Sukle. "We have learned from our aviation business that systems run very well on very precise standards."

"An onboard system that has to render and display a navigation chart requires that data to be in a very precise standard. And it takes work to be able to do that, as you might guess. The slightest deviation in interpretation of these standards from source can often cause the wrong information to be displayed."

We believe that for all 70 Hydrographic Offices of the world to understand the standard, to interpret the standard correctly, and produce data with the right precision levels against that standard such that a system can display it consistently, is not going to happen. There's too much variation in that."

Mr Sukle says that the global overview necessary for the development of overarching standards cannot be achieved by HOs, given the localised mandate they are set by their own governments in most cases.

"Unless it can be done in conjunction with the technologies that are onboard, and can be done on a global scale, (it won't work)," he said.

"Just to do it for their own country, it doesn't work. It's like the experience of the SENC format we talked about, and the

hours compiling that onboard - that's the procedure that needs to be harmonised."

"If we're providing a technology that works in these 90 per cent of different ECDIS systems, we have to be sure that we have harmonised that data so that it plays directly in the display environment."

Further to this, Jeppesen has also called for an opening-up of the regulations describing what types of electronic data can be classed as 'official' (and therefore legal for use for navigation). This is another argument sure to cause major disagreements with the HOs.

"We see our role as also being the provider of a database that would be allowed to meet full ECDIS carriage requirements, and adhere to the standards that are set for SOLAS," said Mr Sukle.

"Right now regulations say that that digital data must come individually from the Hydrographic Offices. The industry has to step it up a little bit here."

Mr Svanes added: "We get the data and we make products out of it. An ENC is a product, it's a subset of what is called S-57."

"HOs should make S-57 data, which is a transfer standard so that the data can be transferred. We would get all of the S-57 data available - if it's not available we'd have to create the data from paper charts or other sources."

"(We want that data to be allowed to) meet the carriage requirements. If that happened I'm not sure you would need mandatory carriage requirements for ECDIS, because the cost / benefit of using electronic charts is so high anyhow that all ships

would install it. For now that is prevented because the price of ENC's is so high."

Better tools

The third and fourth of Jeppesen's 'opinions' are somewhat less controversial than the first couple, stating that "We must look to the master and help them lighten (not increase) their workload. They need better situational awareness and decision making tools", and "Everything we do must earn its way onboard."

The key to these approaches, said Mr Sukle, is to deliver products and services that create value for vessel operators.

"In the interests of safety, people need better situational awareness and decision making tools," he said.

"We're looking at a concept that collapses a bunch of different types of things onto a chart or a digital image, that brings in sovereign data, local regulations, the shipping company's own policies and procedures, tailored information about the particular vessel, and volatile information about tides, weather, and so on."

"This would all be condensed into a diagram or picture that's procedural based, not cartography based - the idea is 'we want to get this asset to this area, how do we make that work'. You'll see some new things coming out."

"We need to look way beyond today, at what we need to do to develop the kind of situational awareness tools that are needed to process this increasingly complex amount of information in a way that the person can make a safe decision." DS

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