



Dossier du BHI IHB File No. S1/1810

LETTRE CIRCULAIRE 23/2008
28 février 2008

**REPONSE DU BHI A UN ARTICLE PUBLIE DANS « DIGITAL SHIP »
A PROPOS DE JEPPESEN MARINE**

Madame la Directrice, Monsieur le Directeur,

1. Le Comité de direction a appris dans un rapport publié dans Digital Ship (édition de mars) que Jeppesen Marine suggérerait que les Services hydrographiques nationaux se tiennent écartés du secteur commercial pour se consacrer entièrement à la production de données hydrographiques, laissant aux fournisseurs commerciaux la production de cartes marines et de publications nautiques à partir de ces données. Dans un courrier électronique adressé au président du BHI, le directeur de Jeppesen Marine pour les questions liées à la sécurité de l'industrie maritime et aux services associés a effectivement donné la confirmation des points de vue exposés dans cet article.

2. Un exemplaire de l'article de Digital Ship est joint en annexe à la présente, à titre d'information. L'article est également disponible sur Internet, à l'adresse suivante :

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

3. Compte tenu de la nature de cet article et du message qu'il contient, le comité de direction a estimé qu'il était important de fournir à l'éditeur de Digital Ship une déclaration éclairée sur la question afin de donner un point de vue objectif. En conséquence, un résumé factuel des divers engagements et obligations qui relèvent des Services hydrographiques nationaux sous l'angle de la fourniture de services hydrographiques a été adressé à l'éditeur de Digital Ship, le 26 février 2008. Un exemplaire de cette déclaration est joint en annexe A à la présente.

4. Le Comité de direction continuera de surveiller la situation.

Veuillez agréer, Madame la Directrice, Monsieur le Directeur, l'assurance de ma haute considération,

Pour le Comité de direction,

A handwritten signature in blue ink, which appears to read 'Robert Ward', is positioned above the printed name and title.

Capitaine de vaisseau Robert WARD
Directeur

Annexe A :- Déclaration du BHI – Les *Obligations et engagements des Services hydrographiques nationaux en matière de fourniture de services hydrographiques*
P.J. 1 : extrait de Digital Ship, mars 2008 - Pages 27-29.

DECLARATION DU BHI

Les obligations et engagements des Services hydrographiques nationaux en matière de fourniture de services hydrographiques

Un article récemment publié dans Digital Ship indique que Jeppesen Marine (qui a récemment fusionné avec C-Map) suggère que les Services hydrographiques nationaux, qui sont des autorités gouvernementales, se tiennent écartés du secteur commercial pour se consacrer entièrement à la production de données hydrographiques, laissant les fournisseurs commerciaux produire des cartes et des publications nautiques à partir de ces données.

La fourniture de services hydrographiques qui inclut les levés hydrographiques, la production de cartes marines et de publications nautiques, ainsi que la diffusion d'avis aux navigateurs, constitue une obligation pour les **gouvernements** dans le cadre du Droit international des traités. La responsabilité de ce service public incombe donc aux gouvernements et ne peut pas être directement transférée aux fournisseurs commerciaux. En même temps, le rôle du secteur commercial, à l'appui de ces responsabilités gouvernementales, par le biais de mécanismes de production et de distribution en aval, d'un bon rapport coût-efficacité, pour les produits nautiques officiels est largement reconnu et toujours plus sollicité par les Services hydrographiques nationaux.

Les faits suivants se rapportent à ces questions.

La fourniture de services hydrographiques, qui inclut les levés hydrographiques, la publication de cartes marines, les livres des feux, les tables de marée et diverses autres publications nautiques, ainsi que la diffusion d'avis aux navigateurs est une obligation qui incombe aux **gouvernements** dans le cadre du Droit international des traités, en particulier la Règle 9 du Chapitre V de la Convention SOLAS.

Le Droit international des traités confère, de manière claire, une obligation juridique et une responsabilité, aux gouvernements contractants, non seulement pour la collecte des données, mais également pour la production des cartes marines et des publications nautiques ainsi que pour leur maintenance et leur mise à jour ultérieure. Il s'agit d'**obligations gouvernementales** qui sont satisfaites par leurs Services hydrographiques nationaux respectifs. Elles ne sont pas traitées séparément parce qu'elles sont liées entre elles et fondamentales pour les intérêts des Etats côtiers du point de vue de la sécurité en mer, de la protection des vies, de la protection de l'environnement marin, de la sécurité maritime et de la gestion des zones côtières.

Les Etats côtiers ont la responsabilité primordiale d'assurer la création et la distribution de produits de navigation officiels approuvés par les gouvernements, dans le contexte de la convention SOLAS, plutôt que dans le cadre du secteur commercial. Le rôle du secteur commercial consiste à soutenir cette activité et à continuer à fournir des mécanismes de distribution efficaces et rentables pour ces produits officiels.

Obligations des gouvernements dans le cadre du Droit international

Les gouvernements ont accepté les conditions des divers accords, traités, conventions et obligations internationaux, en ce qui concerne l'hydrographie, la cartographie marine ainsi que la sécurité de la navigation et la protection de l'environnement marin. Ils sont, pour cela, appelés gouvernements contractants.

Les Services hydrographiques assurent la collecte et la gestion des données hydrographiques, la production de cartes marines et de publications nautiques et fournissent un service de mise à jour, au nom des gouvernements contractants. Ceci, dans le but de satisfaire aux obligations qu'impose le Droit international des traités aux gouvernements contractants. Les Services hydrographiques ont toujours accepté la responsabilité de leurs cartes et de leurs services.

Les conventions et accords internationaux suivants concernent tous les cartes marines et les publications nautiques :

Règle 9 du chapitre V de la convention SOLAS – Fourniture de services hydrographiques

Cette règle stipule de manière explicite que les gouvernements contractants s'engagent à :

- Veiller à ce que les **levés hydrographiques** soient exécutés de manière à satisfaire, dans la mesure du possible, aux exigences de la sécurité de la navigation ;
- **Elaborer et diffuser des cartes marines officielles, des instructions nautiques, des livres des phares, des annuaires de marées et d'autres publications nautiques officielles**, s'il y a lieu, répondant aux besoins de la sécurité de la navigation ;
- **Diffuser des avis aux navigateurs** pour mettre à jour, autant que possible, les cartes marines et publications nautiques officielles ; et
- Fournir des moyens de gestion des données pour appuyer ces services.

Cette règle stipule également que les gouvernements contractants s'engagent à

- Veiller à ce que les cartes marines et les publications nautiques soient aussi uniformes que possible et
- Tenir compte, dans la mesure du possible, des **résolutions** et recommandations **internationales** (et notamment de celles adoptées par l'OHI); et
- Coordonner leurs activités autant que faire se peut afin de veiller à ce que les renseignements nautiques et hydrographiques soient disponibles à l'échelle mondiale d'une manière aussi rapide, fiable et claire que possible.

Règle 2 du chapitre V de la convention SOLAS – Définition d'une carte marine ou d'une publication nautique

Cette règle définit clairement la nature des produits que les gouvernements contractants sont obligés de fournir dans le cadre de la Règle 9. Elle stipule que :
« ... une carte marine ou une publication nautique est une carte ou un recueil spécialement établi ou une base de données spécialement compilée, à partir de laquelle une telle carte ou un tel recueil est établi, qui est publié de manière **officielle par un gouvernement, un service hydrographique accrédité ou une autre institution gouvernementale compétente, ou sous son autorité, et qui est conçu pour répondre aux besoins de la navigation maritime.** »

Cette règle fait également référence, dans une note de bas de page, aux résolutions et recommandations pertinentes de l'OHI concernant l'autorité et les responsabilités qu'ont les Etats côtiers de fournir des cartes conformément à la règle 9.

La Résolution A.958(23) de l'Assemblée de l'OMI, dans le cadre de la fourniture de services hydrographiques : « Invite les **gouvernements**, en plus des obligations qui leur incombent en vertu de la règle 9 du chapitre V de la Convention SOLAS, à :

promouvoir, par l'intermédiaire de leurs administrations maritimes nationales, l'utilisation des systèmes de visualisation de cartes électroniques et d'information (ECDIS) ainsi que l'utilisation et la production **de cartes électroniques (ENC) officielles.**

La Résolution A/58/240 de l'Assemblée des NU (2003), au chapitre sur les océans et le droit de la mer, invite « l'Organisation hydrographique internationale et l'Organisation maritime internationale à poursuivre leurs efforts coordonnés pour prendre de concert des mesures visant à susciter une coopération et une coordination internationale accrues pour le passage aux cartes marines électroniques, et à étendre le champ des données hydrographiques au niveau mondial, particulièrement dans les zones de navigation et les ports internationaux et là où se trouvent des étendues maritimes vulnérables ou protégées. »

L'Article VIII.c de la Convention relative à l'OHI charge le Bureau hydrographique international (BHI) de « favoriser l'échange de cartes et documents nautiques entre les services hydrographiques des gouvernements membres ; »

Participation de l'industrie

Les 80 Etats membres de l'OHI ont reconnu l'importance des diverses parties prenantes (fabricants d'équipement, producteurs de logiciels, navigateurs, exploitants de navires, sociétés de classification, et autres) pour contribuer à la fourniture de services hydrographiques et notamment pour contribuer à la mise en œuvre des ECDIS et à la production des ENC.

L'OHI convoque une réunion annuelle d'une durée de deux jours, appelée « forum du groupe d'intérêt », dans le cadre de laquelle sont examinées toutes les questions liées à la fourniture de services hydrographiques. Par ailleurs, les Organisations internationales non gouvernementales (OING) sont invitées en tant que « collaborateurs experts » à participer aux travaux des divers organes techniques de l'OHI, forte de leur expérience et de leurs connaissances pour ce qui est de l'établissement des meilleures, normes, procédures et pratiques, dans l'intérêt des navigateurs et de la communauté maritime.

De nombreux « collaborateurs experts » de l'OHI sont issus de producteurs de cartes commerciaux, tel Jeppesen, et fournissent une contribution utile à l'OHI, dans son rôle de coordinateur de l'activité hydrographique globale ainsi que de la production et de la tenue à jour de normes internationales d'appui.

Les producteurs de cartes commerciaux ont des niveaux d'expertise reconnus, notamment pour ce qui concerne la reproduction et la gestion de données et de produits existants et vérifiés, et ils apportent à certains Services hydrographiques, leur assistance, sous contrat, pour des aspects de routine et préliminaires de la production cartographique; toutefois, la sélection des données hydrographiques pertinentes, la validation des travaux entrepris ainsi que la mise à jour des cartes et la responsabilité d'ensemble des cartes constituent une tâche fondamentalement différente qui ne peut être menée à bien qu'avec l'expertise que seuls les Services hydrographiques détiennent et il est donc logique que cette tâche incombe au gouvernement d'origine, conformément aux principes énoncés précédemment.

Distribution des ENC

Les ventes de produits, la distribution et la disponibilité des cartes sont des questions que les Services hydrographiques et les gouvernements des Etats côtiers doivent établir et qui sont régies par les politiques et les exigences nationales. Le coût global de la fourniture de services hydrographiques est financé par des fonds publics. Le revenu tiré des ventes de cartes couvre seulement une part infime de leur coût.

En ce qui concerne les ENC, l'OHI a établi un certain nombre de principes afin de parvenir à assurer une cohérence dans la production et la mise à disposition des ENC. Ceux-ci sont appelés les principes WEND (base de données mondiale sur les ENC) et ils ont été approuvés par les Etats membres de l'OHI. L'un des principes WEND encourage les Services hydrographiques à mettre leurs ENC à la disposition des détaillants par le biais des Centres de coordination régionaux pour les ENC (RENC). Pour le moment il existe deux RENC principaux : l'IC-ENC basé au RU et géré par le SH du RU, et Primar qui se trouve en Norvège et qui est géré par le SHN. L'IC-ENC a un sous-centre australasien basé en Australie et géré par le Service hydrographique australien.

Les RENC sont des organisations à but non lucratif qui constituent des centres de distribution uniques qui permettent aux détaillants d'obtenir des ENC à des prix de gros. Les RENC ne commercialisent pas et ne vendent pas directement au public. Ceci s'effectue par l'intermédiaire des détaillants dont Jeppesen Marine fait partie.

Les RENC sont des grossistes en ENC, qui agissent pour le compte de leurs Services hydrographiques contributeurs. Ils ont été créés pour contribuer à assurer la cohérence et la disponibilité des ENC ainsi que des services de mise à jour associés. Ils ne participent pas aux ventes directes et ne sont pas en concurrence avec le marché commercial de distribution des cartes, en aval. Le prix de gros des ENC disponibles via les RENC est fixé par les gouvernements des Services hydrographiques concernés.

Les RENC sont régis par des organes de direction constitués de représentants des Services hydrographiques nationaux participants.

Certains Services hydrographiques ne distribuent pas leurs ENC par le biais des RENC. Ils les mettent directement à la disposition des utilisateurs finaux ou bien passent par le biais des détaillants de la même manière que les cartes papier et les autres publications nautiques ont toujours été mises à disposition.

Le rythme de production accéléré des ENC officielles a été reconnu par de nombreuses parties prenantes du secteur maritime, y compris par les administrations sur la sécurité, par les navigateurs et par les sociétés de classification qui conviennent également que la couverture en ENC de certaines parties du monde est déjà assurée de manière adéquate. Lors de la Conférence de l'OHI d'avril 2007, les Etats membres ont réitéré leur engagement à assurer la production d'ENC et ont pris la résolution de parvenir à assurer une couverture, une mise à disposition, une cohérence et une qualité appropriées des ENC d'ici à 2010. A ce stade, tout semble indiquer que cet objectif sera atteint.

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 - Tim 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 openS-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?"

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

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Digital Ship March 2008 page 28

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."

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