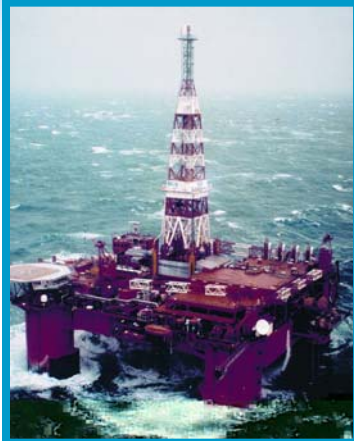


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The *STRAITSFORECAST*

Info@SEA™



6th Sept 2005

By Mark Womersley (CEO) Info@SEA Pte Ltd

info@sea.com.sg



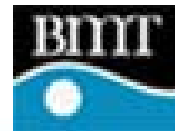
Digital Ship September 28th 2005

Joint Development & Commercialization of a Digital Tidal Atlas (DTA) under Info@SEA Pte Ltd

Joint Venture Partners:

- *DHI Water & Environment*
- *BMT Asia Pacific Pte Ltd*
- *MPA Venture*

Info@SEA™



Knowledge Management – “Always On”

@ Why Do Integrated Ships and Multi-Stakeholder Port Environments Require Knowledge Management?

- The complexity of organizations
- The complexity of information
- The resulting need for knowledge creation
- The relationship between growth and knowledge
- The opportunity for knowledge providers

@ *Improved Communication technologies*

@ *Greater access to information*

@ *New business models & pricing mechanisms*

@ *Understanding the ‘value and urgency’ of information*

@ *Greater need for timely information exchange between ‘ship to shore & shore to ship’*

‘Efficiency, Safety, Security, Environmental Performance & Compliance’



Why is the information need today any different than before?

- @ Greater information need relating to efficiency, safety, security, environmental performance and compliance
- @ Increasing requirements for Ships, Ports and Terminals to manage financial, operational and environmental risk
- @ The opportunity to push or pull information on demand, coupled with the growing reality of broadband to ships has paved the way for maritime e-science
- @ Knowledge management is required to ensure that the 'Data Pipe' is filled with Intelligent information



How much information is too much?

- @ Distinct difference between, Data, Information and Knowledge
- @ Knowledge creation is the providing timely information in the context of an end users immediate need
- @ Technology should reduce the data to intelligent information and present it to the end user in a manageable form
- @ Human factors are an integral part of knowledge creation
- @ RTD involving the development of 'Commercial Decision Support Systems' must be 'User Driven'



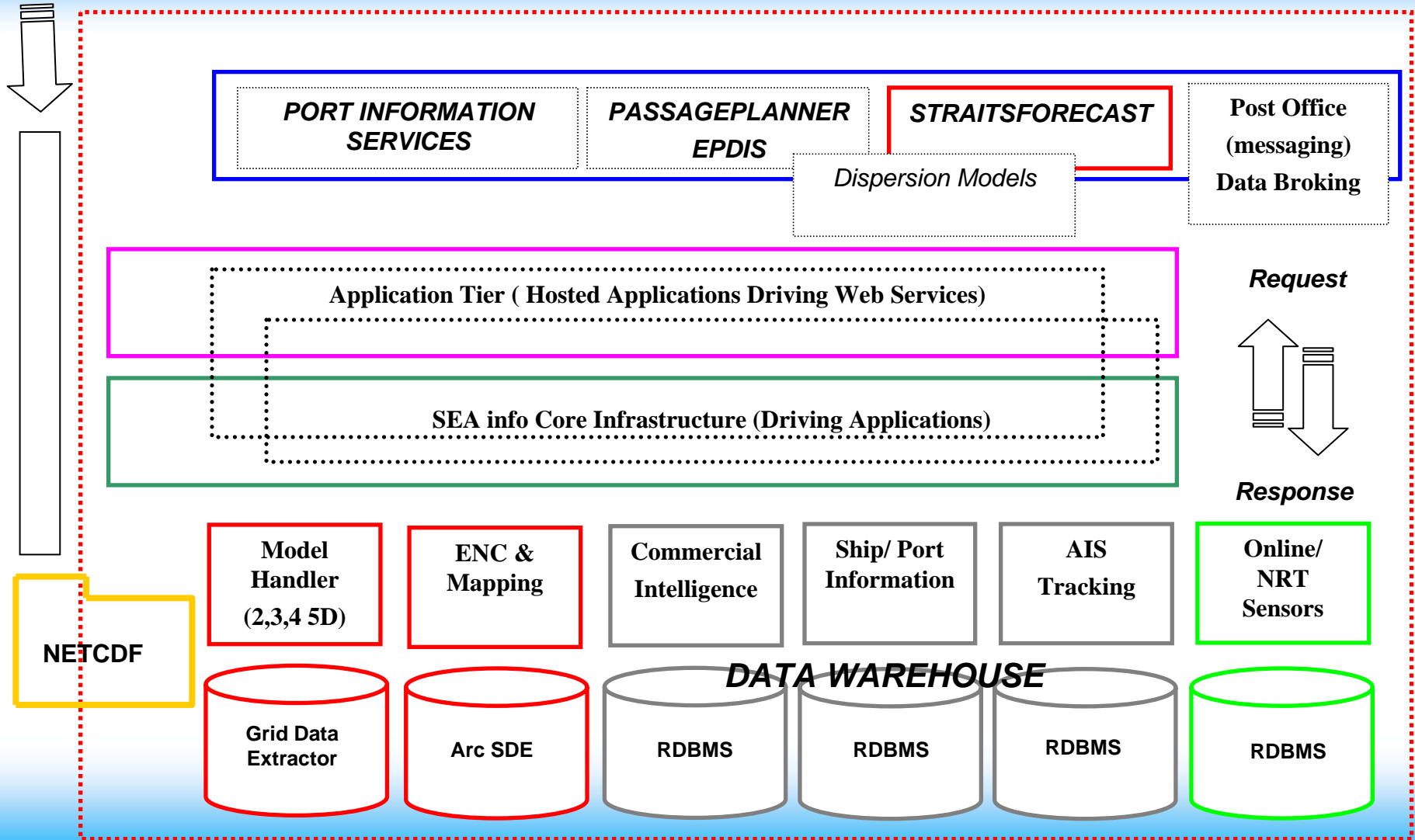
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***The Digital Ship
Knowing the value of information***

“The age of e-science and knowledge creation is likely to leave a window of opportunity for Value Added Services in the Maritime Sector”



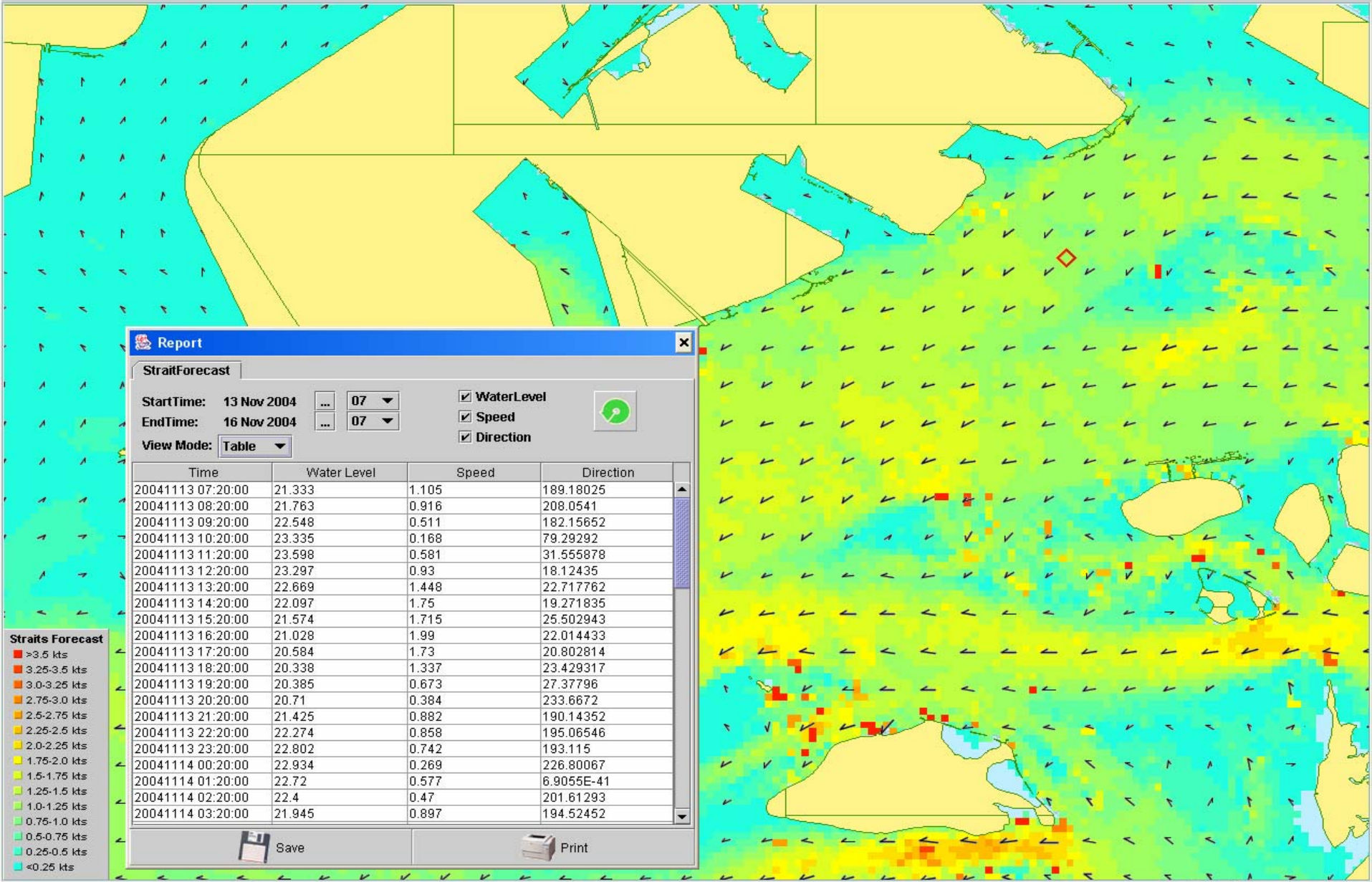
DATA PIPE



The *STRAITRSFORECAST*
A Digital Tidal Atlas (DTA) For Singapore
and the Malacca Strait
www.sea.com.sg



1:36,000 FastForward 1.0 /sec start



Report

StraitForecast

StartTime: 13 Nov 2004 07:00 WaterLevel
 EndTime: 16 Nov 2004 07:00 Speed
 View Mode: Table Direction

Time	Water Level	Speed	Direction
20041113 07:20:00	21.333	1.105	189.18025
20041113 08:20:00	21.763	0.916	208.0541
20041113 09:20:00	22.548	0.511	182.15652
20041113 10:20:00	23.335	0.168	79.29292
20041113 11:20:00	23.598	0.581	31.555878
20041113 12:20:00	23.297	0.93	18.12435
20041113 13:20:00	22.669	1.448	22.717762
20041113 14:20:00	22.097	1.75	19.271835
20041113 15:20:00	21.574	1.715	25.502943
20041113 16:20:00	21.028	1.99	22.014433
20041113 17:20:00	20.584	1.73	20.802814
20041113 18:20:00	20.338	1.337	23.429317
20041113 19:20:00	20.385	0.673	27.37796
20041113 20:20:00	20.71	0.384	233.6672
20041113 21:20:00	21.425	0.882	190.14352
20041113 22:20:00	22.274	0.858	195.06546
20041113 23:20:00	22.802	0.742	193.115
20041114 00:20:00	22.934	0.269	226.80067
20041114 01:20:00	22.72	0.577	6.9055E-41
20041114 02:20:00	22.4	0.47	201.61293
20041114 03:20:00	21.945	0.897	194.52452

Save Print

- Straits Forecast**
- >3.5 kts
 - 3.25-3.5 kts
 - 3.0-3.25 kts
 - 2.75-3.0 kts
 - 2.5-2.75 kts
 - 2.25-2.5 kts
 - 2.0-2.25 kts
 - 1.75-2.0 kts
 - 1.5-1.75 kts
 - 1.25-1.5 kts
 - 1.0-1.25 kts
 - 0.75-1.0 kts
 - 0.5-0.75 kts
 - 0.25-0.5 kts
 - <0.25 kts

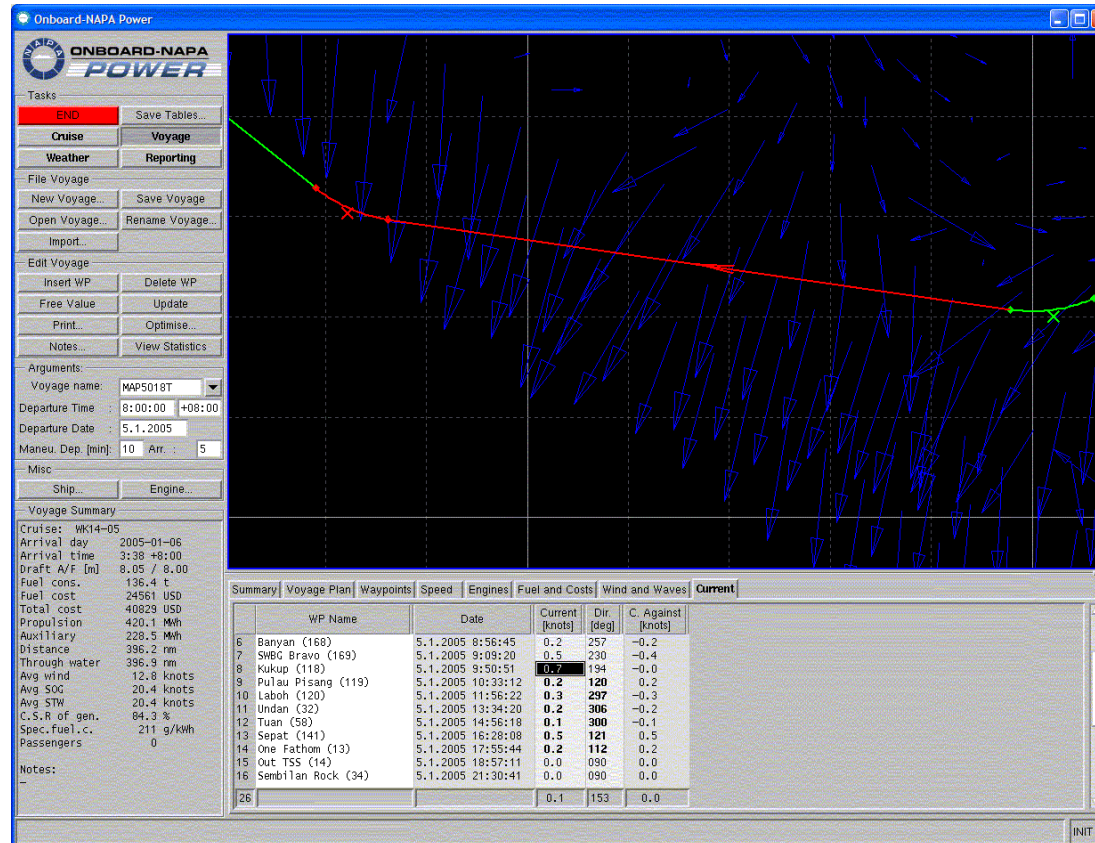
STRAITSFORECAST

User Participation & Demonstration Trials

- @ **PSA Pilots**
- @ **Seamaritime**
- @ **ExxonMobil**
- @ **Vopak**
- @ **Ocean Tankers**
- @ **Jardine**
- @ **Petroship**
- @ **Barwill**
- @ **Trans Marine**
- @ **Thome**
- @ **Inchcape**
- @ **Rajah & Tan**
- @ **EARL**
- @ **NOL**
- @ **APL**
- @ **NSSPL**
- @ **Titan Ocean**
- @ **Singapore Polytechnic**
- @ **Seawell marine**
- @ **Heng Fu KOT**
- @ **Keppel Smit**
- @ **Shell Eastern (SEITCO)**



Integration to 3rd Party Systems Onboard



SuperStar Virgo

The Newest & Largest Megaship In Asia-Pacific



BOOKING [CLICK HERE]

ENQUIRY [CLICK HERE]

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Objectives of DTA trials

- @ **Build confidence in “STRAITSFORECAST”**
 - *presentation of tidal information is both intuitive & quantifiable*
 - *information can be applied in an operational setting*
 - *accuracy, resolution, coverage are appropriate*
- @ **Hydrodynamic models driving the STRAITSFORECAST**
 - *Five day operational forecast (25m/ 10 minute resolution)*
 - *30 day planning forecast (75m/ 20 minute resolution)*
 - *Malacca Strait Model (675m/ 60 minutes)*
- @ **Prove long term operational reliability of Forecast Model**
 - *define and quantify accuracy/ precision*
 - *identify constraints on accuracy/ precision*
- @ **Develop commercial understanding of service use**
 - *who, how, how often, how much (revenue forecasting)*
 - *deployment and operating cost*
 - *Pricing structures and mechanisms*



User Feedback – “a glimpse of the future”

- @ Mouse and lat/long enquiry for current speed and direction values
- @ Help Line
- @ Hourly ‘Snapshots’ of tidal flow patterns over 6hrs on one screen.
- @ Ability to download 36 – 48 hrs data onto a tablet PC for Malacca Strait
- @ 12 – 24 hours data for harbour pilots
- @ Download tidal current flow animation to forward to the ship
- @ The ability for agents to download data for onward transmission to the ship
- @ Horseburgh light to One Fathom Bank (UKC)
- @ Coverage of bunker/ship-ship transfer areas (Regional)
- @ Adoption as a training tool
- @ Provision of a 45 day look ahead planning model for berthing
- @ Access to historical data
- @ Link to pilotage guidelines/ Portnet
- @ **Greater validation on approaches to VLCC berths for NRT forecasting**
- @ **Broadcasting of forecasts for the Malacca & Singapore Straits**
- @ **Under keel clearance system for VLCC berths/ One Fathom Bank**
- @ **Prediction of water depth at the berth for berthing windows**
- @ **Worldwide Ocean currents**
- @ **Interface data/animation into ARPA**
- @ **Passage planning tool (ETA/ Fuel Optimization/Power Management)**
- @ **3D models for deep draught vessels**



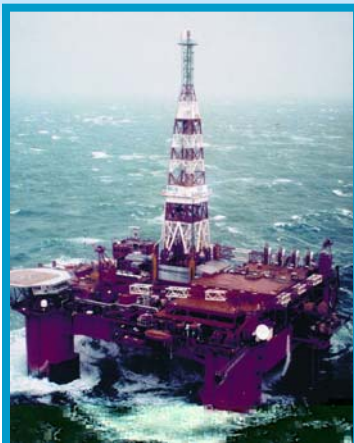
What will be the nature of maritime information exchange in the future?

“A paradigm shift in the volume, content and timing of information exchanging between ship and shore may be inevitable.”

“The value of Information will focus on efficiency.”

“Commercial interests in efficiency may jointly fund the public need for information on safety, security and compliance; opening the way for new models of governance.”





QUESTIONS, THANK YOU

Info@SEA™



1st June 2005

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Digital Ship September 28th 2005