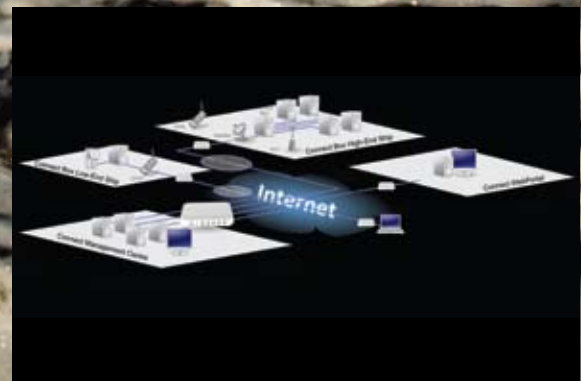


IHC Systems

Dedicated to Efficient Dredging



*IHC Connect
worldwide dredge
connectivity*



an IHC Merwede company

The technology innovator.

Efficient Dredging...

'**Efficient Dredging**' helps contractors to make the most of their dredging equipment: to generate high economic and ecological benefits, achieve optimal utilisation rates, reduce dredging time, make the dredging process smoother, simplify fault diagnosis, reduce downtime and wear, prevent under- and over-dredging, and maximise crew satisfaction.

Even after a shipbuilder has built reliable and efficient equipment, and even after contractors have optimised equipment utilisation, the **Efficient Dredging** concept continues to make a significant contribution, providing dredgers with extra 'senses' and 'hands & feet'.

Relatively modest investments in instrumentation, automation, surveying and simulation techniques produce major improvements in efficiency and accuracy. Automation under dredge master supervision can enhance production by up to 30%.

IHC Systems draws on all kinds of conventional and innovative control, automation, communication and presentation technologies. We also make the most of the knowledge and resources of the entire IHC Merwede group.

The concept is honed in close alliances with contractors and worked out in specific products, systems and services for every category of dredger and in every field. The products can cope with all dredging and mining conditions.

Our knowledge, expertise and experience are dedicated to reducing over-dredging, spillage, energy consumption, emissions, turbidity, ecological side-effects and operational costs. They represent our contribution to a sustainable future for all our stakeholders.

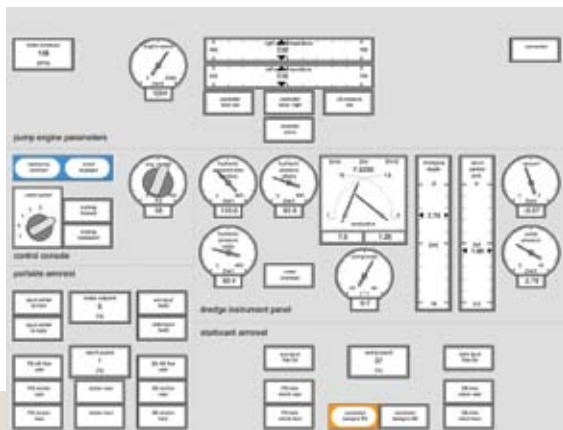
...our contribution to a sustainable future



Benefits

The dredging and mining industry has become ever more ICT-intensive. Communication technologies continue to develop, accompanied by increasing demands for more process information, faster maintenance or repair response times, and higher levels of equipment availability. So remote services are increasingly in demand. IHC Systems has responded by developing IHC Connect. IHC Connect is a general

information acquisition and communication platform specially designed for the dredging and mining industry. The platform provides secure access to all onboard automation systems, and it can monitor virtually any process on board, making the information available through an easy-to-use WebPortal.



Online availability of data about actual status ...



load on wear parts ...



instrumentation ...



vital sub-systems and ...



location, covering TSHDs ...

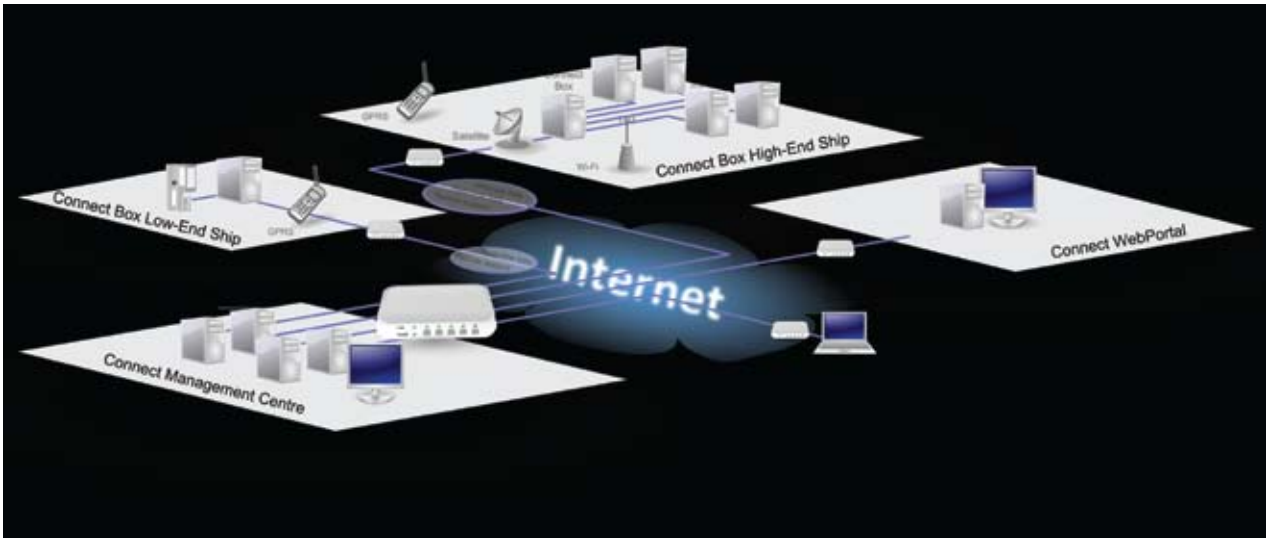


CSDs ...



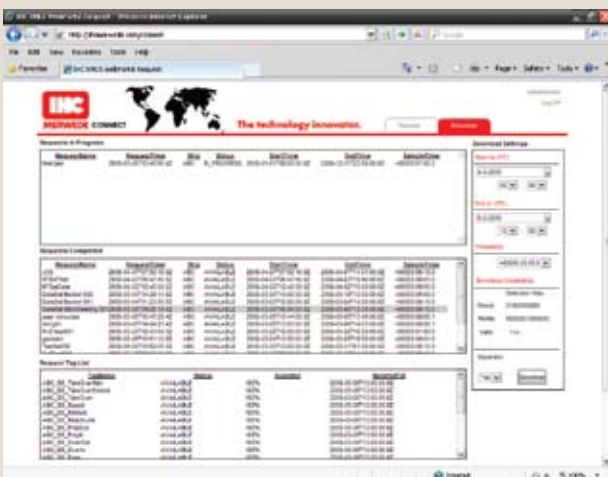
and excavator dredgers

Detailed process information from any piece of onboard equipment is the key to reducing support costs and downtime...



IHC Connect facilitates the reduction of support cost and downtime

Download and Request pages



Download as PDF



Request as Web Portal

Flexibility

The key characteristic of the IHC Connect platform design is flexibility. Flexibility for supporting all types of dredging and mining equipment, flexibility for supporting innovative application development and use and, finally, flexibility for providing customers with the freedom to build in features that meet their particular demands. To deliver the desired level of flexibility the system breaks down into four modules that can be mixed and matched according to every customer's needs.

Connect Box

The Connect Box is the onboard equipment that operates as an interface between the automation systems on the ship and the Connect Management Centre on shore. One of the most important features of the Connect Box is the one that enables the collection of vast amounts of process data. The multi-channel Connect Box not only supports IHC automation systems, third-party systems can also be connected. The supported communication standards are, OPC-DA, OPC-HAD, ODBC and OLE-DB. A total of 5000 signals with a maximum sampling rate of 10Hz can be logged and stored onboard for up to a year. The integrated calculation module can convert the raw data into useful information. All available data – whether it is real-time data from the connected system, historical log data or processed data – can be sent to shore. To prevent unnecessary strain on the available data link, data is only sent to shore when requested.

Connect Ship to Shore Connection

Any available TCP/IP based onboard data link (e.g. satellite, GPRS or WiFi) can be used and shared for the ship–shore connection. Security is of the utmost importance and so IHC Systems uses the communication protection technology of one of Europe's leading security providers, Phion. Every ship will be provided with its own centrally managed firewall appliance to ensure that only authorised traffic reaches the onboard network. The integrated bandwidth management functionality ensures that only the minimum bandwidth will be used.

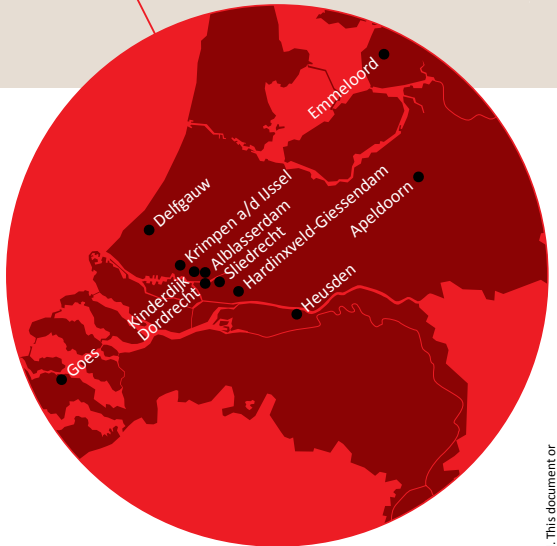
Connect Management Centre

The Management Centre secures all traffic on the communication platform. Health monitoring to secure the high availability of the platform, as well as administrative tasks like updating configuration settings and installing software patches in the onboard firewall appliance, are all managed from this single central location onshore. The Management Centre also processes all data requests submitted using the Connect WebPortal or otherwise. In this way, data from the ship is never transferred twice and large data files can be handled and distributed easily amongst multiple users. Besides providing secured communication and data management, the Management Centre has also been developed to provide remote support for vessels at sea. Specialised IHC Systems support representatives can respond without delay to support calls from anywhere in the world. The ability to access onboard

automation systems and to provide immediate and pro-active support helps to cut equipment support costs and down times.

Connect WebPortal

The Connect WebPortal is the point of access for ship-owners for remote access to all information available on board their vessels. The simple interface provides enormous flexibility to obtain data for the analysis of specific behaviour about on board equipment. With an easy-to-use request page, users can search for and select data from every owned Connect Box. Once a selection has been made, the Management Centre processes the request and reports back on progress and on the availability of the data sent to the download page. To prevent unauthorised access, the Web Portal is also secured using Phion protection technology.



Shipyards – The Netherlands

Hardinxveld-Giessendam
Heusden
Kinderdijk
Krimpen aan den IJssel
Sliedrecht

Shipyards – P.R. of China

Dalian

Sites – The Netherlands

Apeldoorn
Delfgauw
Dordrecht
Emmeloord
Goes
Hardinxveld-Giessendam
Heusden
Kinderdijk
Sliedrecht

Sites – Europe

Blandford Forum – United Kingdom
Belgrade – Serbia
Komarno – Slovakia
Riding Mill – United Kingdom
Rijeka – Croatia

Sites – USA

Houston, TX
Wayne, NJ

Representative offices

Beijing – P.R. of China
New Delhi – India
St. Petersburg – Russia

Regional IHC Organizations

worldwide

Dubai – United Arab Emirates
Lagos – Nigeria
Mumbai – India
Singapore – Republic of Singapore
Tianjin/Tanggu & Guangzhou – P.R. of China

IHC Systems B.V.

Industrieweg 30, 3361 HJ Sliedrecht
P.O. Box 41, 3360 AA Sliedrecht
The Netherlands

T +31 18 443 19 22
F +31 18 443 15 05
sales.sy@ihcmerwede.com
www.ihcsystems.com