



Geo-Replicator Guidance Note

Typical Maritime Applications

1. Safety & Quality Management

No matter what format your current Quality and Safety Management System (QSMS), a common criticism from Flag and Class inspectors is that the data within many systems is out of date or incomplete.

Infonic's Geo Replicator prevents this occurrence by ensuring that all new data added by Quality or Safety staff is **automatically** identified, transported to the vessel / fleet and applied to the onboard QSMS data without any vessel staff action.

When an inspector reviews the QSMS you can be assured that the documents they are reviewing reflect the latest version of the office QSMS documentation.

Customer notes

SHELL has very stringent health and safety guidelines for its oil tankers. Compliance with the International Safety Code mandates that up-to-date health and safety information be on board all vessels at all times.

Infonic's Geo-Replicator software, which compresses and sends information to remote users up to 100 times faster than any other method, allows Shell to send health and safety information to its tankers on low bandwidth satellite connections, quickly and automatically.

2. Training

There is a crisis in the commercial maritime market with more jobs available than qualified and/or competent staff. Many industry commentators agree that with improving employment prospects on shore in most third world countries, the supply of cheap maritime labour has now been exhausted.

Seafarers now have the choice to be at sea, rather than it being a necessity. Ship operators need to step up their crew welfare efforts to attract and keep crew.

In addition to elevated crew welfare & onboard benefit expectations, ship operators have an increasing need to train their onboard staff both for:

- Compliance and Regulatory reasons;
- To mitigate a lower than average onboard skill set and;
- Reduce the risk of accidents through poor training.

Infonic's unique Geo-Replication technology allows onboard deployment of web based training tools (flash video for instance), giving the trainee the same look, feel and user experience as they would have ashore.

The ship operator benefits from well trained and informed staff without the cost or risk of providing a real time internet / HTTP link to the vessel.

If a broadband satellite link is available on ship - via VSAT, FBB or other IP satellite system, Infonic's data compression technology will significantly reduce the amount of data transmitted, freeing bandwidth for operational use.

Training information could be presented as Flash Video, online or in the form of supplier manuals. Infonic's maritime data compression software is file and format independent so all data can be kept in its original form. All types of data are kept up to date onboard without any manipulation ashore and without any effort on the part of shoreside or vessel staff.

Customer notes

The US Navy created the "Distance Support" web portal to give personnel on ships instant access to full and up-to-date maintenance documentation.

The effectiveness of the portal was, however, limited by bandwidth availability over the Navy's satellite network.

Infonic's Geo-Replicator technology provides the bandwidth optimization that makes the updating of the Distance Support portal possible across the entire fleet via satellite.

3. Crew Welfare

In order to get the benefit of well trained and informed staff, Ship Operators need to identical or at least equivalent shore side facilities onboard for vessel staff including:

- Internet
- E-mail
- Phone (satellite or GSM)
- SMS (satellite or GSM)
- Local News from home
- Vocational and non-vocational study aids to enhance career and life enjoyment

A recent survey of seafarers showed that internet access was the highest priority but least available facility onboard. The ability to use mobile phones onboard came second.

Ship operators are reticent to provide bandwidth intensive internet facilities as they are expensive and a security concern - even with VPN, Firewall and trusted site securities in place.

Infonic's data compression software can provide an offline experience of internet content to vessel staff – great for news study courses. Staff using Infonic are unaware that they are offline as the data / site access appears the same (Internet Explorer for instance) as if they were connected. Course and feedback forms can be completed and transmitted in near real time.

Infonic helps ship operators to keep motivated and informed staff on board ship, aiding retention whilst not exposing the onboard ITC infrastructure to outside threats or bandwidth restrictions.

Customer notes

Odfjell is a global shipping operator with over 100 ships including oil tankers, gas carriers and bulk cargo carriers.

Odfjell has purchased Infonic's Geo-Replicator network acceleration software for deployment across its 60-strong fleet to deliver two-way ship to shore updating of its Quality and Safety Management System (QSMS).

4. Collaboration

Maritime users of Mobile Satellite Services (MSS) have to contend with very low speed (9.6 Kbps typical), non-IP based infrastructure.

As a consequence, most fleet collaboration platforms have been developed in a proprietary, non-IP, database centric fashion, supplied by small niche vendors with a small customer base.

These proprietary collaboration and data exchange tools are not easily compatible with the shore side enterprise applications. Data has to be manipulated before it can be "read" by such applications and the business has to carefully consider changing to a new system if the vessel system is not easily capable of migration.

Enterprise Applications were designed for use in shore offices in a Local Area Network (LAN) and not a Wide Area Network (WAN) environment - especially not a global satellite enabled WAN. The bandwidth requirement and the underlying "chattiness" of such Applications made them unsuitable for Vessel deployment.

However from a data migration exchange and usability viewpoint, standard "office" applications should be deployed across the entire organisation, both ship and shore. Most staff, of any nationality, would be familiar with MS Office and thus would be able to use the applications within that framework with little or no training.

By eliminating the chatty connectivity of LAN Applications and significantly reducing the data exchanged whether over a live “constant on” VSAT or T1 link or over a demand assigned broadband satellite link, Infonic’s compression software enables onboard deployment of Enterprise Collaboration tools such as:

- Microsoft SharePoint (MOSS 2007);
- Portals and Intranets;
- Document Management and Business Process;
- Standard off the shelf enterprise software

The Satellite element of the WAN need not be the barrier to complete enterprise wide collaboration - including the fleet.

Customer notes

Dredging International’s high-tech fleet of trailing suction hopper dredgers and cutter suction dredgers take leading roles in port construction from France to India, Singapore, Australia and Uruguay. It is required to comply with ISM regulations including requirements for vessels to hold up-to-date Health and Safety documentation and has deployed Microsoft® SharePoint as a central repository for this and other information.

To keep the information on board up to date, whilst minimizing the data sent over satellite, Dredging International deployed Infonic Geo-Replicator software.

5. Remote Systems Maintenance and Monitoring

Infonic Geo-Replicator can compress files of any format. Because it does not rely upon traditional database differencing techniques it can be deployed to address:

- Anti virus file distribution (as opposed to CD’s!)
- System and Program file DLL’s
- Engine, Machinery and Service condition monitoring, (large unstructured data files typically unsuitable for e-mail or offline data exchange);
- Notice to Mariners
- Chart Corrections
- Cargo load and stability (vessel departure) information

Infonic enables managers to enhance the performance of staff and systems both onshore and onboard.

Customer notes

NAVSEA (Naval Sea Systems Command) uses the ICAS (Integrated Condition Assessment System) Sensorization program to help assure that all ships in the US Navy are running smoothly. Through the use of sensors on the ships, equipment experts on shore can monitor the condition of all ships and their components at sea.

Hundreds of megabytes of data are generated through this preventative maintenance program, which creates a huge challenge to efficiently send the sensors

data off the ships to the shore, for equipment experts to analyze, via low bandwidth satellites.

By using Infonic Geo-Replicator, Naval Sea Systems Command was able to significantly compress the amount of sensor data that needed to be sent via satellite.

6. General Data Exchange & Administration

Even with 1Mbps+ satellite links, ship operators complain that they do not have enough bandwidth to run all their required business applications and often resort to manual distribution of information on CD / DVD.

This distribution can be regular in the case of Anti-Virus updates, or ad hoc for technical / fleet circulars or machinery / equipment supplier manuals and updates.

Replicating this data with Infonic Geo-Replicator environment will:

- Remove the intensive administrative burden of burning and distributing CDs / DVDs.
- Reduce the ever increasing onboard administration burden.
- Release valuable bandwidth for the critical business applications.

Satellite bandwidth is a scarce and expensive commodity in the MSS arena. The recent improvements in throughput speeds and availability can only be effectively harnessed by combining data optimisation and quality of service and data prioritisation techniques.

Infonic Geo-Replicator is the first step in creating an efficient and collaborative satellite reliant enterprise.

Customer notes

Olympic Shipping and Management SA is owned and managed by the Alexander S. Onassis Public Benefit Foundation.

It uses Geo-Replicator to efficiently distribute update files for third party proprietary anti-virus software to its fleet. The use of Geo-Replicator reduces the amount of update data to be transmitted over satellite, and results in a much more regular and reliable process than previously was the case.

For more information please contact maritime@infonic.com or make an enquiry via the website www.infonic.com/online_enquiry.php.

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