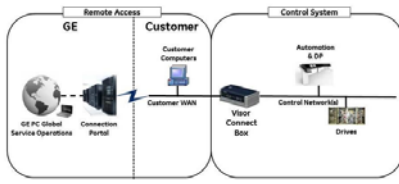




# Visor Remote Monitoring & Diagnostics

Remote support for drives and automation systems, including state of the art incident notification features for the Marine industry.



Visor Service Architecture

## Safe and Secure

GE's Visor Remote Monitoring and diagnostic solution provides a safe and secure means of remotely supporting GE Power Conversion's drives and automation control systems through GE's Visor Service Portal (VSP). A site based Visor Connect Box (VCB) connects to all GE Power Conversion's drives and automation control systems on site via the system control network(s) ensuring a complete system solution.

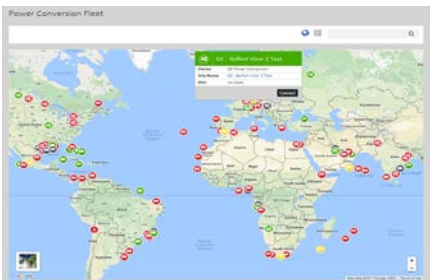
an internal workflow packaging the relevant alarms and time series data and will then send it to the GE Visor Service Portal. Once received in the Visor Service Portal an email will be generated to the GE Contact Centre who will ensure the issue is handled in a timely matter.

As part of the incident notification system, all alarm data and pre-defined time series data will be collected from 15 minutes before the incident and 5 minutes after (*default setting*).

The Visor remote support capability is delivered through a combination of a "safe and secure" remote connection to the integrated site data historian together with remote desktop access to the engineering tools and project information held on the integrated engineering server.

## Key Benefits

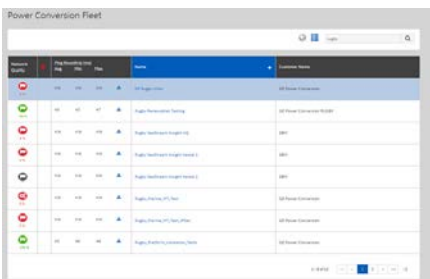
- **Simplifies remote service support** through a world-wide accessible Visor Service Portal providing geographical and list views of the GE Power Conversion installed base.
- **Reduces response time** in reaction to site issues through automatic incident detection, notification to service personnel and incident data upload (including drive trip histories) to the Visor Service Portal and by enabling GE's service engineers and experts to quickly connect remotely to the installed site system to help diagnosis.
- **Compact and cost effective** solution which can be scaled if necessary to suit quantity of data and control LAN connections.
- **Integrated site data historian** capable of logging >250,000 tags/s.
- **Integrated engineering server** holds/ manages all project information in one place on site.
- **Fitted as standard** on Power Conversion's drives and automation control system solutions.
- **Open interface** to 3rd party clients with OPC-UA or FTP to access logged data
- **Predix enabled** for remote analytics



Visor Service Portal Map View

System security is ensured through adoption of best security practices including using a combination of hardware firewalls to both the customer WAN and control LANs to create a DMZ and remote connection through a secure tunnel.

A lockable switch option is used to give the customer control over the level of access granted to remote users to ensure that remote changes are only made with the express permission of the customer on site.



Visor Service Portal Connections

The complete site based Visor system is encapsulated as standard into a single compact mechanical package – the Visor Connect Box (VCB) based on the GE RXi controller. For larger systems or when large amounts of data have to be recorded (e.g. CCTV), a modular rack based PC solution is available (ship server).

## Automatic DP Drift Alerts

When a vessel experiences a Dynamic Positioning drift off, the inbuilt Data Historian will trigger an internal workflow packaging the relevant alarms and time series data and then will send it to the GE Visor Service Portal. Once received in the Visor Service Portal an email will be generated to the GE Contact Centre who will ensure the issue is handled in a timely matter.



Visor Service Portal Connection Monitor

As part of the incident notification system, all alarm data and pre-defined time series data will be collected from 15 minutes before the incident and 5 minutes after (*default setting*).

## Automation Blackout Notifications

When a vessel experiences a Blackout or partial Blackout, the inbuilt Data Historian will trigger



Visor Connect Box



Achilles Level 1 Certified

# Visor Basic Features

VCB SHIP SERVER

Cyber Security	Integrated hardware firewalls to customer WAN and to control network Site initiated connection to VSP over encrypted IPsec secure tunnel VSP access control using GE identity (SSO)/site with access logging Achilles Level 1 certified	●	●
Configuration	P80-Pilot	●	●
Historian Logging Rate	>250,000 tags/s	●	●
Historian Logged Data Classes	Time series analogues and digitals Alarms and events Trip histories (up to 300 drives) Generic Files (Logs, reports, office docs, 3rd party logger, CCTV). controlled)	●	●
Historian Logging Rate	200GB of 256GB SSD (supports 3-6 months storage on typical system) No-loss data compression ensures only changes stored	●	18TB Raid 6
Control Network Interface	1 IP4 control network (single or dual Ethernet) via integrated firewall	●	up to 5 Networks
Customer WAN Interface	Single network connection via integrated firewall	●	●
Logging to Visor Service Portal (VSP)	On incident detection: Automatic notification, associated logged time series and alarms/events data upload	●	●
Access to Logged Data	Web based user interface OPC-UA access or FTP periodic transfer to external computer Manual selection and storage on USB storage device	●	●
Logged Data Archive	Automatic archive of logged data to USB connected storage device	●	Also DVD
Remote Engineering Access	Full RDP access to engineering tool suite hosted/managed by P80-Pilot View of operator screens (read-only screen sharing) View controller and HMI web pages View all historian data	●	●
Access Control	Local lockable key-switch controls the remote access	●	●

## Visor Supported Equipment

Equipment	Engineering Tools	Logging Protocols	Time Series Data	Alarms & Events	Trip Histories	Files	HMI View	Web Pages	Monitor
HPCi	P80i	Ethernet: WDDE, KPI	●		●			●	●
PECe / -Lite	P80i, HDM, Pertu	Ethernet: WDDE, KPI	●		●			●	●
CDC					● <sup>#1</sup>				
AMCx (DP)	DP toolkit, ISaGRAF	Ethernet: proprietary, serial,	●		●			●	●
AMCx (AVC)	EMS, Marine toolkit, ISaGRAF	Ethernet: proprietary NO	●					●	●
HMI PCs	HMI toolkit	OPC-AE, serial printer		●			●	●	
3rd Party PCs		Shared network drive				●		●	
HPC		WDDE	●						
PEC		WDDE	●						
Logidyn		File logging	●		● <sup>#2</sup>	● <sup>#2</sup>		● <sup>#2</sup>	● <sup>#2</sup>
SunIQ	P80i, HDM, Pertu	File logging	●		●	●	●	●	●

#1 via a separate data gatherer PC  
#2 via separate gateway PC

To find out more about GE's Visor RM&D contact:

<b>Australia</b>	+61 2 9842 373	<b>France</b>	+33 1 77 31 20 00	<b>South Africa</b>	+2711237 0000
<b>Brazil</b>	+55 31 3330 5800	<b>Germany</b>	+49 30 7622 0	<b>UAE</b>	+971 44296161
<b>Chile</b>	+56 2 652 6500	<b>India</b>	+91 44 4968 0000	<b>United Kingdom</b>	+44 1788 563 563
<b>China</b>	+86 21 6414 6080	<b>Japan</b>	+81 3 3588 9578	<b>United States</b>	+1 412 967 0765

[www.gepowerconversion.com](http://www.gepowerconversion.com)

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