



Life Is On

Schneider
Electric

SMART VESSEL OPTIMIZER PLUG AND PLAY INTEGRATION

WHITEPAPER: INSTRUMENT AREA NETWORK

Integration Smart Vessel Optimizer and Instrument Area Network

December 2020



Introduction

This whitepaper covers the newly launched product integration between the Smart Vessel Optimizer Platform developed by TechBinder and the new product Instrument Area Network developed and introduced by Schneider Electric. With this integration the ability to scale up and add more sensors to your vessel has never been easier.



Smart Vessel Optimizer

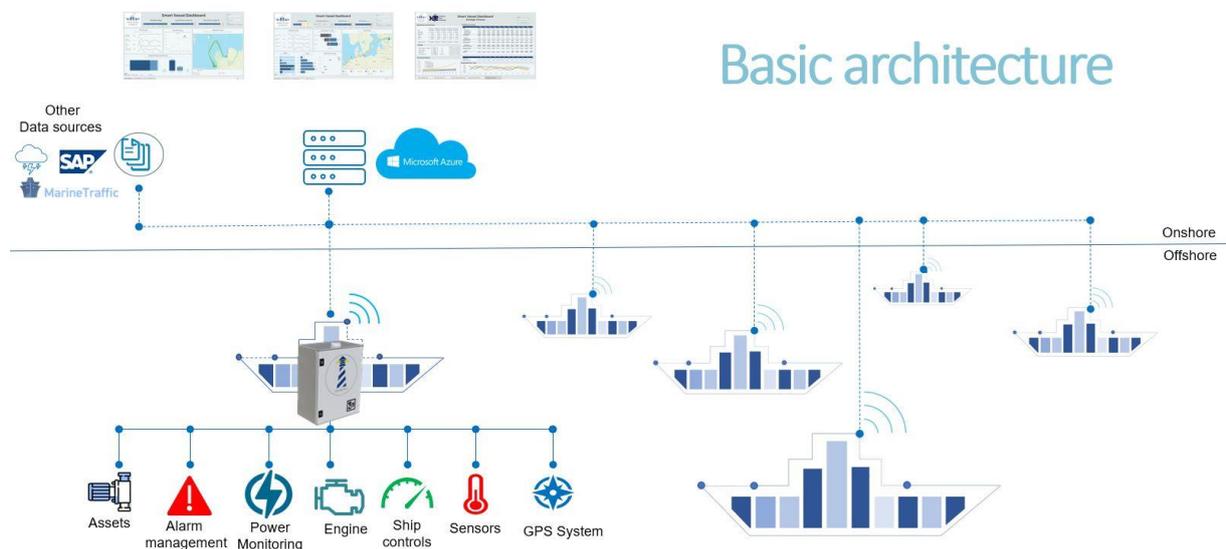
Smart Vessel Optimizer is built to help maritime operations become more efficient, effective, safe and ecologically friendly.

Smart Vessel optimizer is a total solution for:

- Collecting data from different onboard and onshore systems
- Compress the data
- Send data encrypted and via a secured connection
- Store data in the cloud
- Perform data analytics
- Data visualisation

Together with strong technology partners, we ensure a system that allows an easy start and can be scaled up to vast amounts of data analytics with global hardware and software support. This way the value of the system is growing over time with the amounts of data it has stored and with the strategical direction the user chooses. TechBinder supports its customers along the way and drives functionality specified to the need of the user.

The flexibility of the system allows a step by step journey that can be adjusted per use case and desired outcome. The Smart Vessel Optimizer journey starts with setting up a data highway from a vessel to an AVEVA cloud environment. This is where a data set becomes more and more valuable over time and gives more advantages over time.



Instrument Area Network

Modern fleet owners and other operations professionals save time and money with a robust condition and preventative maintenance model enabled by wireless Instrument Area Network devices. Instrument Area Network from Schneider Electric is an ultra-reliable wireless sensor network that gives you actionable insight into the condition of your high-value assets, so you can best protect and optimize your operations aboard of your vessels.

Instrument Area Network is a unique IIoT solution that maximizes battery life and optimizes wireless mesh network data flow. The network of transmitters is enabled with ultra-low-power BLE (Bluetooth Low Energy) radios that provide increased reach into challenging areas reducing power requirements, extending battery life and reliability.

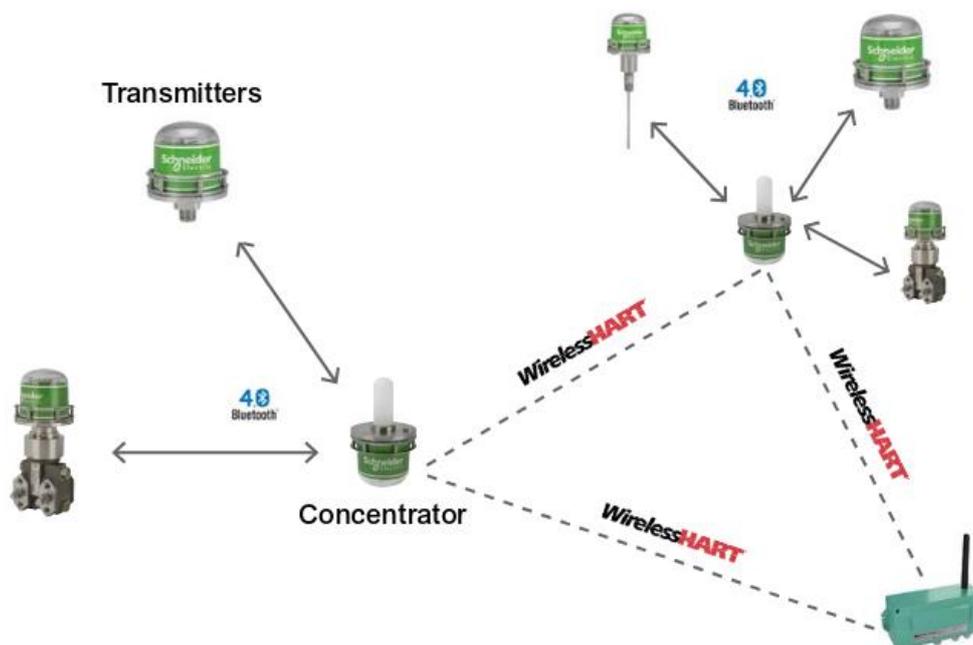
Instrument Area Network increases free path communications and installation flexibility by communicating with installed sensors via a hybrid network of WirelessHART on the mesh and BLE in the local transmitter locations in your vessel. Unlike other mesh networking solutions, the Instrument Area Network architecture optimizes radio paths, ensuring deterministic data flow through all network nodes.

Moreover, because of this architecture, Schneider continuously develops new sensors with new applications that seamlessly integrate into this innovative architecture.

You gain:

- Access to data points that were previously too costly to consider
- Quick insight into asset health for more timely response and scheduled maintenance
- Substantial cost savings by implementing a preventative wireless monitoring program
- Highly flexible and easy to expand with future and even 3rd party measurements

Gain efficiency, reliability and cost effectiveness with Schneider Electric's Instrument Area Network.



Plug and Play

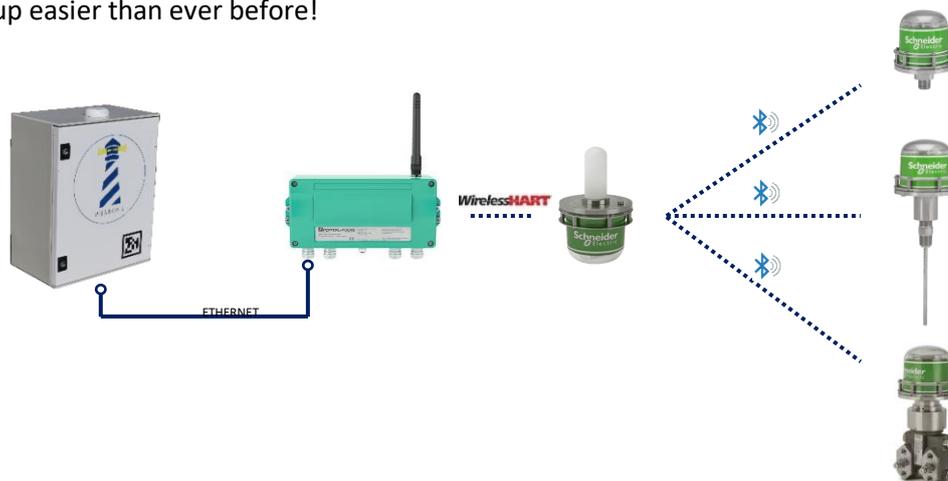
TechBinder continuously develops new integrations to their Smart Vessel Optimizer platform with one must have requirement: a new integration must be accessible to the customer via a plug and play integration, without the need for additional programming or difficult security limitations.

Currently, TechBinder is proud to have added the Instrument Area Network (IAN) from Schneider Electric as a plug and play functionality to their platform. This means that by connecting the WirelessHART Gateway (Pepperl+Fuchs) to the Pharos ONE via ethernet and installing the sensors and concentrators in the required locations the data of the sensors will be flowing directly to the Smart Vessel Optimizer Platform.

The communication protocol used by the Gateway is Modbus TCP, which is a standard protocol found in a lot of different industrial applications. The Pharos ONE is prepared with the correct registers and a prepared naming convention, so the data is sent to shore and always directly available to the prepared dashboards and therefore ready for analysis, not only for one vessel, but also to your whole fleet.

This setup will have huge benefits for vessel owners and operators as the amount of wiring that needs to be in place is limited to only connecting the Gateway to the Pharos ONE. As the Gateway can be mounted directly on the Pharos ONE, this wiring is no issue at all. From there on, IAN sensors can be widely placed wherever necessary. The Concentrators realize the full coverage of the network, such that the data will always be received by the Gateway and thus connected to the Smart Vessel Optimizer infrastructure.

Measure temperatures, pressures and differential pressures, just by mounting the sensors at the location of choice. Be flexible without worrying about cables, connectivity or interference. As a consequence get direct insights in the data and start analyzing accordingly. Get smarter by every second you monitor, so you can make the correct beneficial decisions for your operations. If you consider taking your operations to the next level with Smart Vessel Optimizer, you now have the ability to scale up easier than ever before!



December 2020

www.smartvesseloptimizer.com