**Reporting system,**

As always this is an ever-evolving tool as more and more people get involve reviewing information

Features:

* Costs
* Usage
* Deviations
* Active CIPs
* Steps charts
* Notifications, email, text, radio
* Inventory
* Days of Supply

User interface will be updated with real time data providing the Historian sending

Archive data and reports for audits

System can associate the cleaning cycles before and after each product run. The information for the product run could be batch ID, equipment used, and this can be a manual input by plant personnel or if made available electronically through a spreadsheet or table can be imported. The system could report the before and after cleanings based on equipment, date, and time. The search function then allows should there be a product issue to easily produce the cleaning records on both sides of manufacturing for all equipment involved in the process.

Can help reduce downtime by sending emails, text messages to key plant personnel to respond to system(s) issues. The issue(s) can be actual alarms and failures provided by Historian, escalated as needed if the faults are not cleared.

With sending emails or text messages a table can be made available for items not necessarily an alarm but requiring investigation other circumstances such as delay to temperature; conductivity hold active for too long. Minor changes adding / removing notifications would be part of the monthly fee. Customer will have a user screen to maintain setpoints and email / text messages addresses for notifications.

Application is not licensed per user, it is licensed per plant

Application uses two factor authentication

Web based requiring no software to be installed on desktops. Allows viewing on multiple type of devices

Monthly support fee covers during the time allocated monitoring hosted system for things out of normal circumstances. Update user interfaces should there be changes or updates to information be provided by Historian

Remotely hosted currently on Amazon Web Services (AWS)

On AWS we create web server(s) and a database server. The web and database servers communicate on an internal network, not exposed to the public.

In addition to these we create a virtual load balancer. The Load balancer does not keep any information on it (as it’s not a server) and is used as to “listen” for the http and interact with one of the web servers.

On premises radio transmitter

Audio messages based on PLC faults

Customer or Reporting Application Middleware

Transfer data from Historian to Database Server

Customer Historian

Data Collection Application

https://hilmar.elemcointelligence.com

AWS Load Balancer https://hilmar.elemcointelligence.com

Web Server

elemcointelligence.com

Web Server

elemcointelligence.com

Database Server

elemcointelligence.com

https://hilmar.elemcointelligence.com