GlobalGauge CORPORATION

Global Gauge Corporation

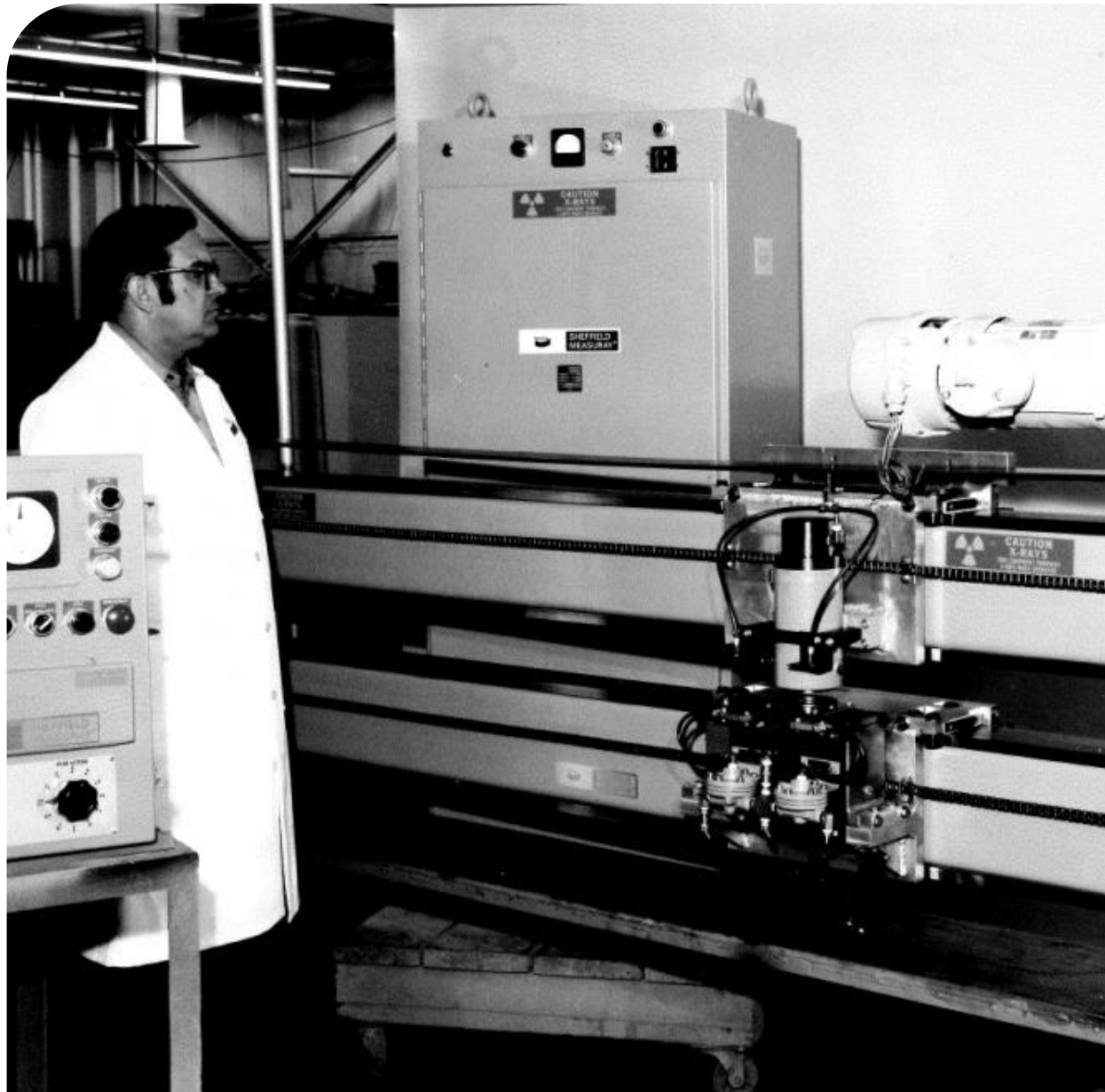
Industrial Measurement Systems
Made in America - Respected Worldwide

Presented by David Kober
Vice President, Sales & Marketing

Global Gauge Corporation

About Us

- Global Gauge Corporation (GGC) is a 25+ year old privately-held USA-based company.
- GGC manufactures precision measurement systems for the primary metals and materials industries.
- GGC has successfully implemented thickness, width, and vision systems at numerous production and processing facilities globally.
- We build our own critical sensors, and always use as many off-the-shelf components as possible.



Global Gauge Corporation

300+

New Systems & Upgrades

24/7/365

Customer Service & Engineering Support

1950

Origin of Legacy Product Line

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GGC:
Gauge Analytics Add-on

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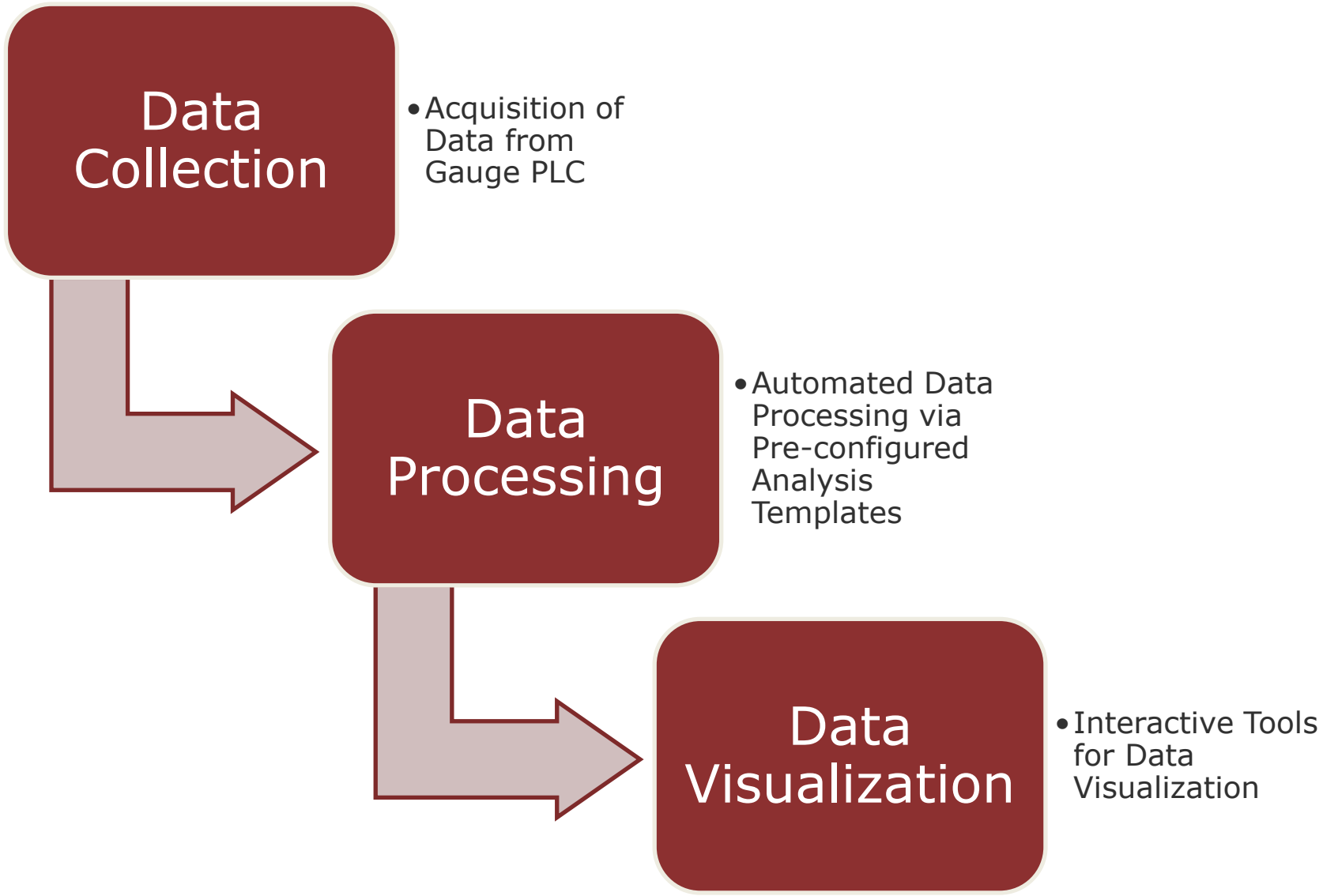

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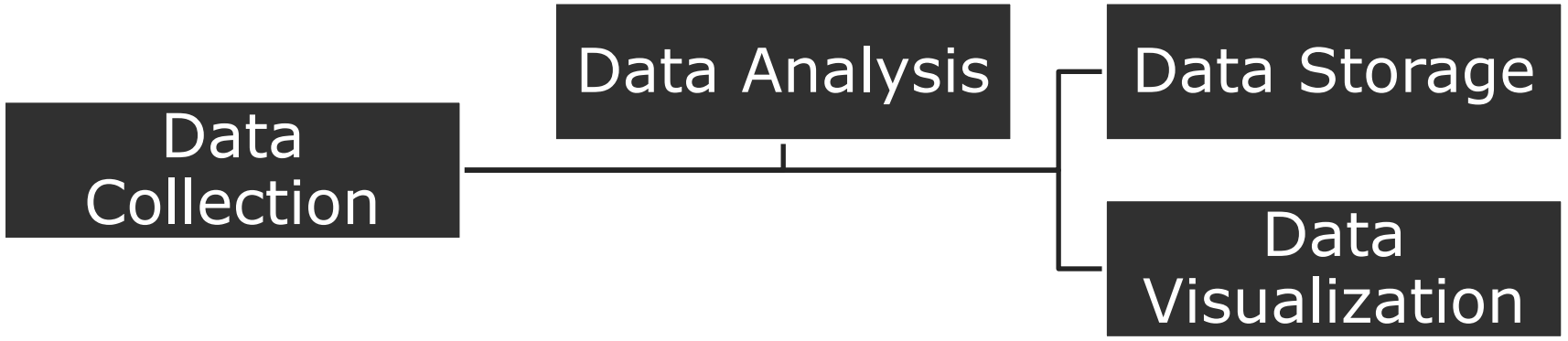

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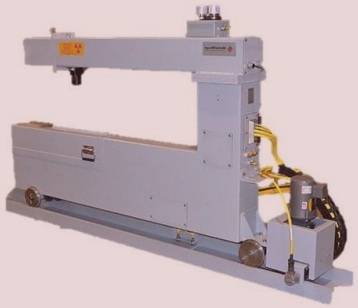
License #1



Data Collection

License #2

Data Analysis

Data Storage

Data Visualization

***End Customer's Virtual Machine**

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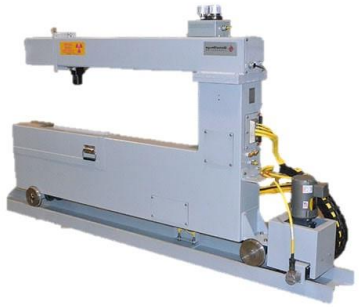

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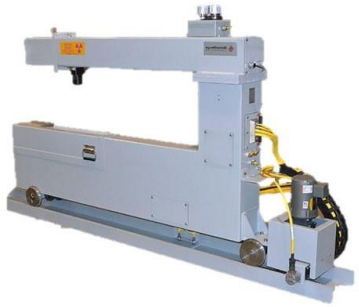

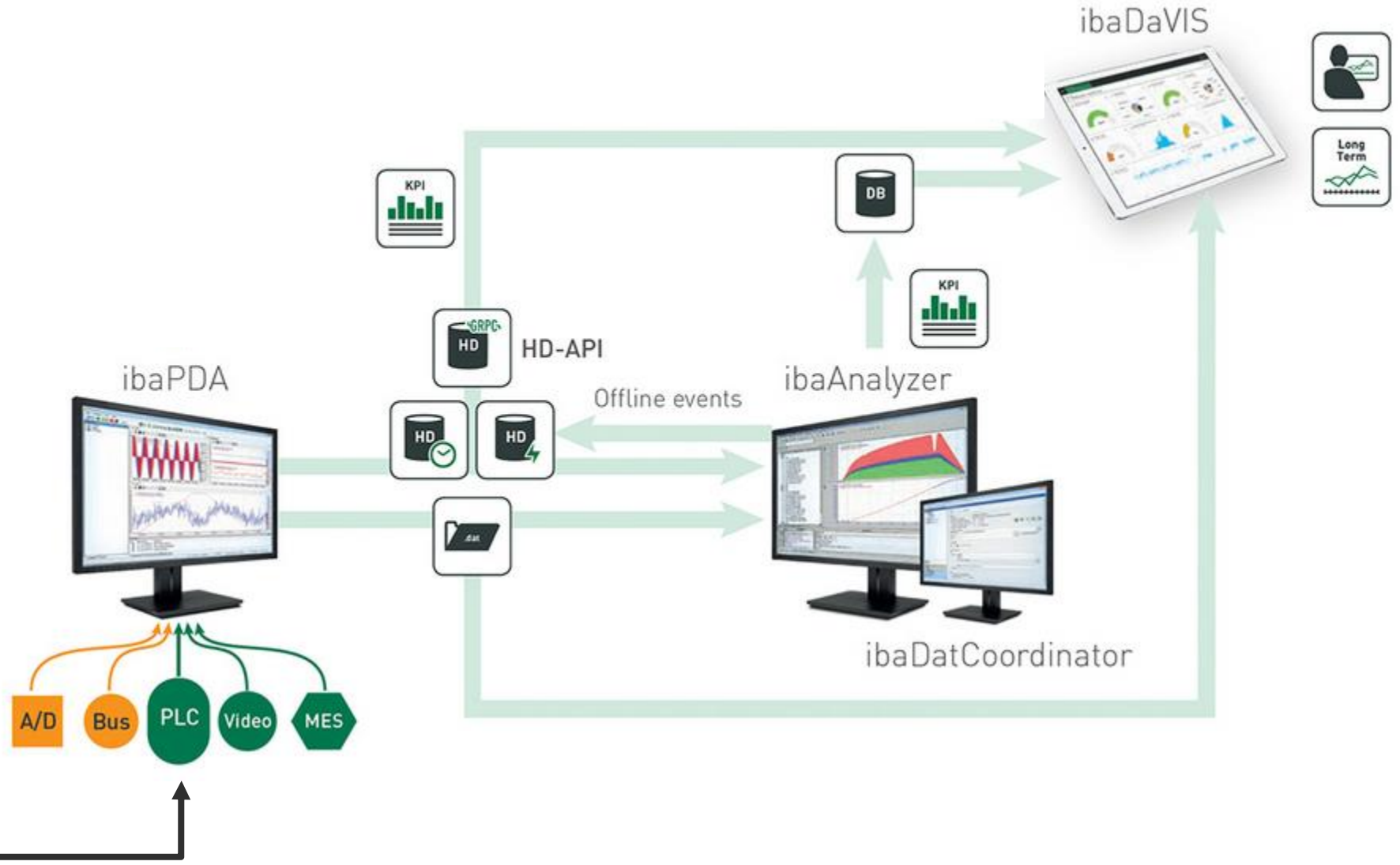

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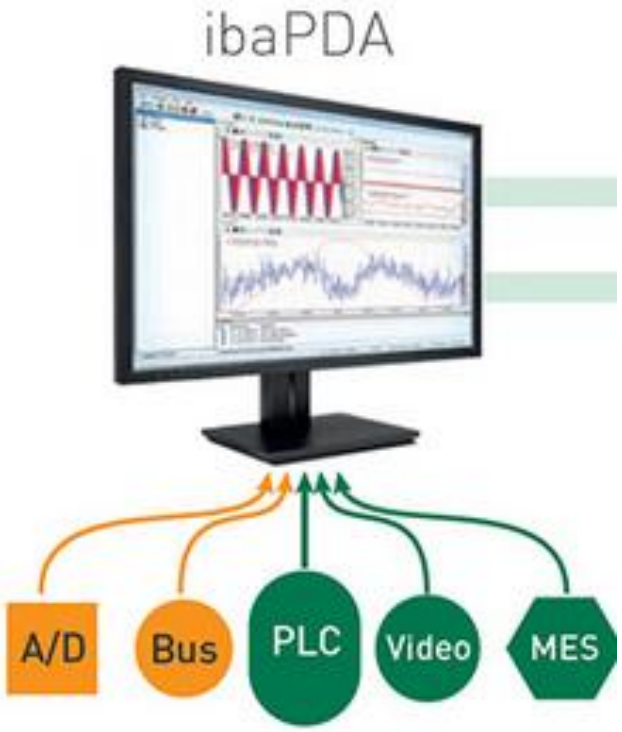
Data Collection Software

- Data, up to 64 tags, to be collected from the GGC PLC via EtherNet/IP.
- Additional Mill setup information to be provided by the Customer via EtherNet/IP or via comma separated Generic TCP/IP message.
- Data to be stored in both per-coil and historical time-series formats.
- Live data access with up to 2 concurrent connections.



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Ports opened by ibaPDA Server (service)

Interface	Port Range		Protocol	Multicast addresses	Remark
ibaPDA client*	9170	9170	TCP		
ibaPDA Discovery	12800	12800	UDP	IPv4: 226.254.92.220	

Table 4: Ports opened ibaPDA Server

Ports used by ibaPDA Client

The listed ports are opened by the respective server.

Interface	Port range		Protocol	Multicast addresses	Remark
ibaPDA Discovery	12900	12910	UDP	IPv4: 226.254.92.220	
ibaPDA Service	9170	9170	TCP		
ibaQPanel (Webbrows-er)	80	80	TCP		
ibaQPanel (Webbrows-er)	443	443	TCP		

Table 6: Ports used by ibaPDA Client when connecting to different servers

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Automated Data Processing Application

- Application used to post-process data from each coil into database tables used for the Web-Server Software.
- Requires Window's service account access to the PC running the Web-Server
- Software and location for shared folder file storage.

Interactive Data Analysis Package

- Application used to allow end-user access to the recorded data.
- Tool used for manual analysis for insights beyond what is provided within the automated post processing template.

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Ports used by ibaAnalyzer

Interface	Port range		Protocol	Multicast addresses	Remark
ibaHD-Server	9180	9180	TCP		
Microsoft SQL-Sever	1433	1433	TCP		
Oracle	1521	1521	TCP		
MySql/MariaDB	3306	3306	TCP		
PostgreSQL	5432	5432	TCP		
IBM DB2	50000	50000	TCP		

Table 19: Ports used by ibaAnalyzer

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Ports opened by ibaDatCoordinator

Interface	Port range		Protocol	Multicast addresses	Remark
ibaDatCoordinator	8800	8800	TCP		
ibaDatCoordinator service discovery	12861	12861	UDP	IPv4: 226.254.92.220	

Table 16: Ports opened by ibaDatCoordinator

Ports used by ibaDatCoordinator

Interface	Port range		Protocol	Multicast addresses	Remark
ibaHD-Server	9180	9180	TCP		
SNMP	1612	1612	UDP		
TCP/IP Watchdog	40002	40002	TCP		
OPC UA Server	48081	48081	TCP		

Table 17: Ports used by ibaDatCoordinator

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Web-Server Software

- Application to serve as the host for the web-based dashboard & visualization tool.

- Allows end-user access to post-processed data within the Customer's local intranet.
  - Will require coordination with appropriate resources within Customer's IT department.

- Customer to provide Windows-based PC (physical or virtual) to host web service within the appropriate network to allow:
  - Network access to the GGC gauge PC
  - Network access to Customer's desired end-user's desktops
  - Shared folder file storage for the per-coil data files
  - File storage the database data

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Ports used by ibaDaVIS

Interface	Port range		Protocol	Multicast addresses	Remark
Microsoft SQL-Sever	1433	1433	TCP		
MySQL/MariaDB	3306	3306	TCP		
Oracle	1521	1521	TCP		
PostgreSQL	5432	5432	TCP		
Web interface HTTP	80	80	TCP		
Web interface HTTPS	443	443	TCP		
ibaHD-API	9003	9003	TCP		

Table 20: Ports used by ibaDaVIS

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Ports opened by ibaHD-Server (service)

Interface	Port range		Protocol	Multicast addresses	Remark
ibaHD-Server	9180	9180	TCP		
ibaHD-Server Discovery	12880	12880	UDP	IPv4: 226.254.92.221	
SNMP	1614	1614	UDP		
ibaHD-API	9003	9003	TCP		

Table 9: Ports opened by ibaHD-Server service

Ports used by ibaHD-Server Client

Interface	Port range		Protocol	Multicast addresses	Remark
ibaHD-Server	9180	9180	TCP		

Table 10: Ports used by ibaHD-Server Client

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Traversing Gauge Data

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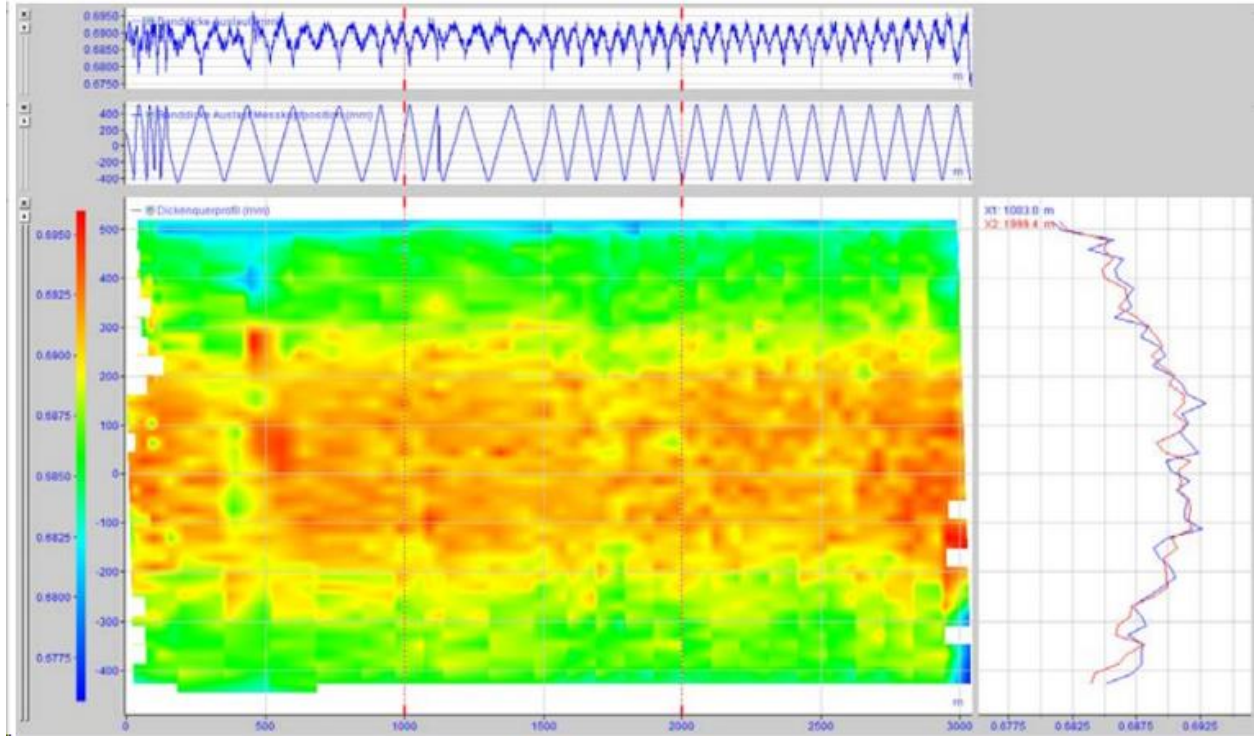
Traversing Gauge Data Visualization

- Using the scanning head positions in conjunction with the thickness measurement, the traversing gauge can be configured to represent the profile in a 2-D color map.
- The interactive markers allow the user to maneuver to a particular length to show the interpolated thickness profile along the width of the strip.
- The y-axis can be manually adjusted or calculated to automatically adjust based upon the product



Traversing Gauge 2-D Profile Interactive Chart

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Web-based Data Access & Visualization

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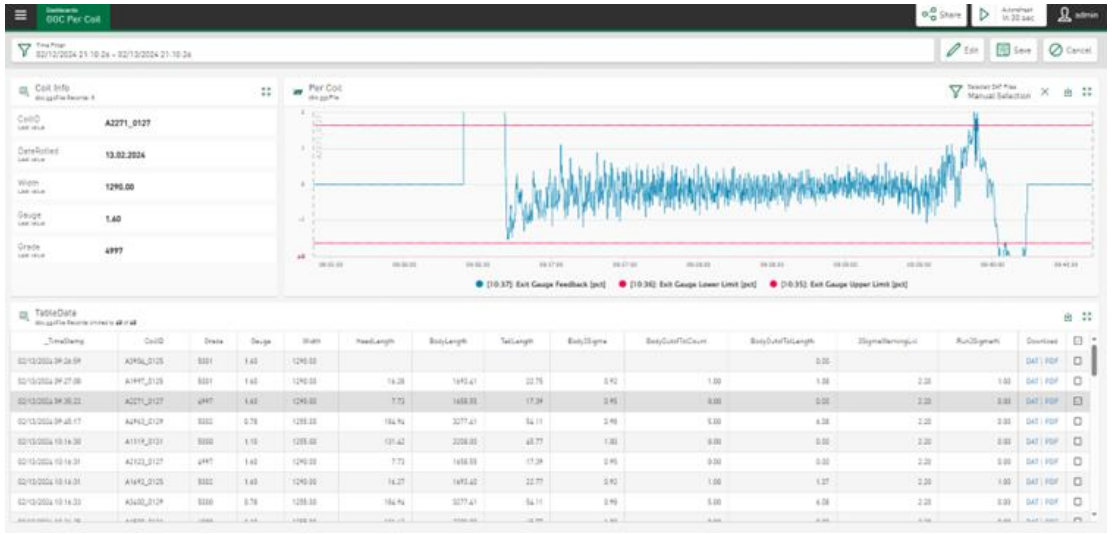
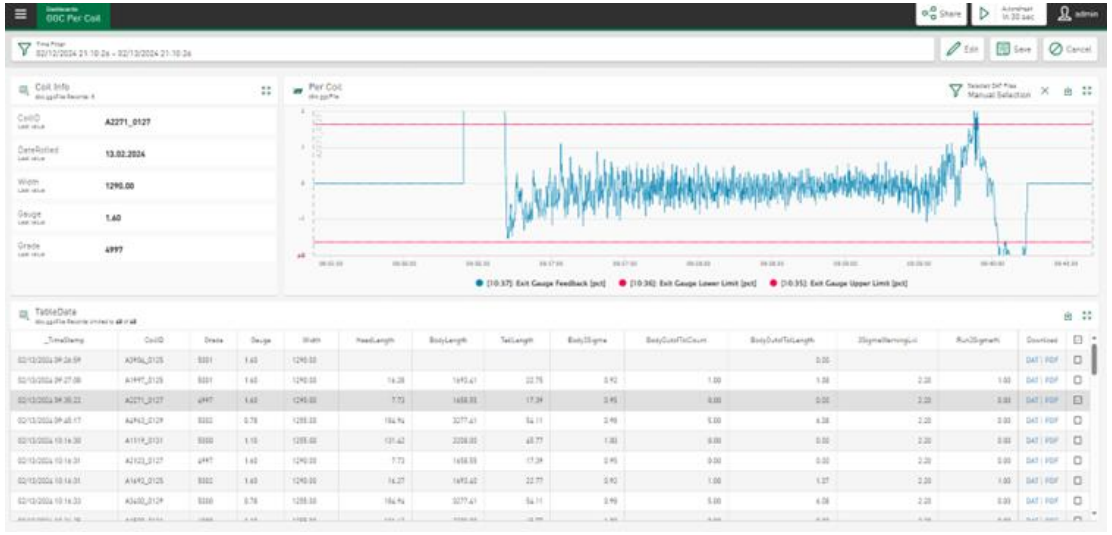
Web-based Data Access & Visualization

- With appropriate intranet access and configuration within the customer's internal process and business networks, it is also possible to enable a web-based data visualization system to allow users to easily access and interact with the data acquired from each coil.

- The user can filter by several parameters, including but not limited to, timestamp, Coil ID, Gauge, etc. The user can also click the desire coil from the table to pull up the gauge trace along with the relevant coil setup data within the same dashboard.



Web-based Data Visualization Dashboard Example



Zoom & Rescale Functionality within the Dashboard

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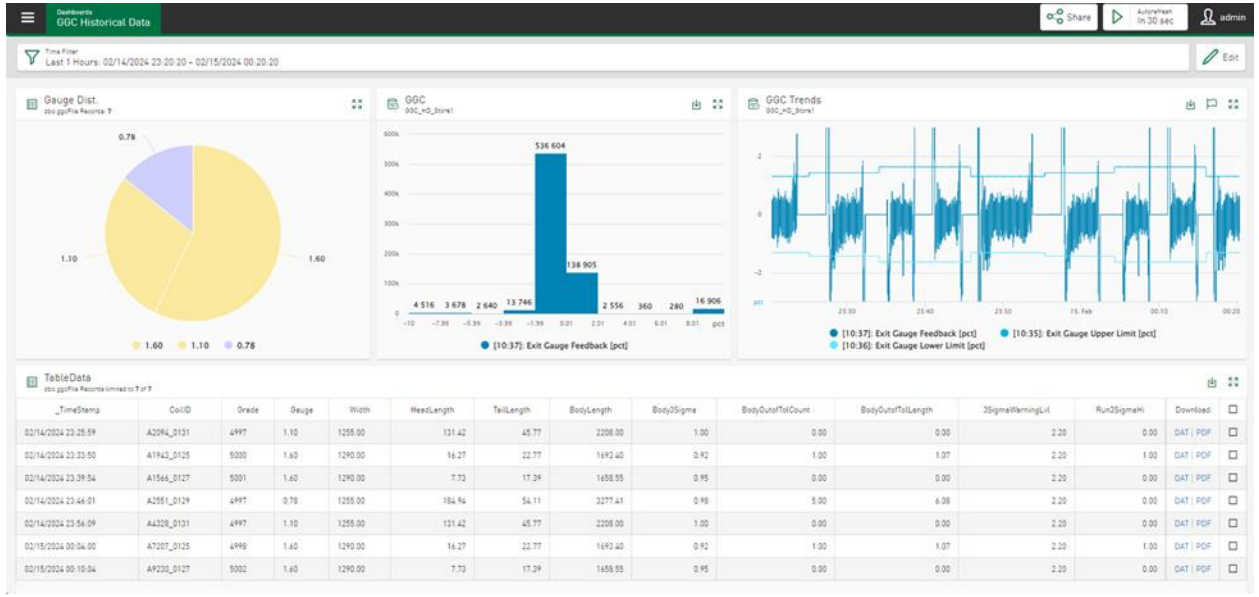
Traversing Gauge Data Visualization

- An additional dashboard is provided to easily visualize and access historical data provided by the gauging system.
- This dashboard is interactive and includes filtering and search capabilities to quickly and efficiently access the desire data.
- The user can scale the y-axis of the graphs by setting user-defined scaling indexes.
- Within the data table, the user can directly access the data from each coil along with the coil's associated PDF coil report.



Historical Data Visualization

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Thank you!

Call us at (937) 254-3500 or
Email me at d.kober@globalgauge.com

For more info, visit www.globalgauge.com.