PRESS RELEASE

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INNOVATION

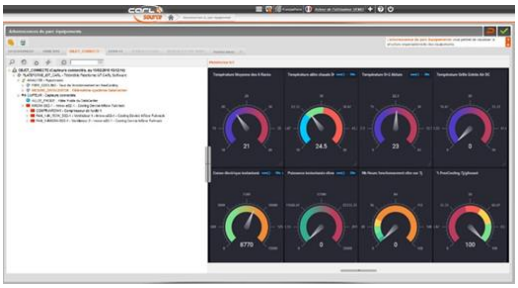
SMART MAINTENANCE: CARL SOFTWARE UNVEILS THE PROTOTYPE OF ITS FUTURE DIGITAL PLATFORM FOR EQUIPMENT

CARL Software, European leader in equipment management (CMMS / EAM) and technical asset management will present the prototype of its new IoT platform dedicated to equipment optimization and predictive maintenance at both GLOBAL INDUSTRIe and BIM World tradeshows.

This digital platform is part of the research on the Internet of Things and predictive maintenance conducted by the publisher and supported by the H2020 European program for industry 4.0: It is the result of a collaborative work carried out with Laas - CNRS laboratory for Analysis and Architecture of System (Paul Sabatier University - France) Viseo Data Science and OdaliD companies, the support of France Auvergne Rhône Alpes County and the European Commission (H2020 Research and Innovation Fund).

With this digital platform which is capable of analyzing real time data provided by communicating sensors, technical services will be able to improve equipment operation (equipment configuration, predictive maintenance, prediction of failure, etc.) thanks to statistical analysis and generation of predictive models.

The development of this prototype dedicated to technical services places CARL Software among the pioneers of tools dedicated to the management of equipment for the industry of the future, Smart Building and Smart Cities.



Real time visualization of sensor data analysis dashboard integrated into CARL Source tree structure

A prototype tested in the building and Data Center of CARL Software:

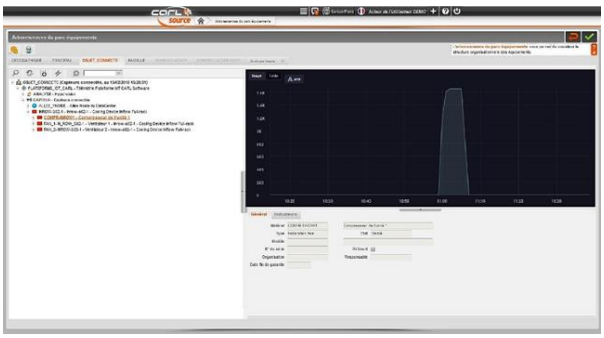
The publisher wished to test its platform with technical equipment and building energy management processes in concrete situations.

It is its own headquarters, a building of 2500 M2, which served as a test base. It includes:

- An air handling unit for the production of hot / cold air,
- A low energy data center (with free cooling and free heating system) with two air conditioning systems
- Storage and energy transformation devices etc.

The platform developed by CARL Software allowed data analysis from its equipment and to measure the energy performance of heating and air-conditioning systems of its building and Data Center.

The project has provided the opportunity to experiment with different technologies of communicating sensors (LoraWAN, SigFox, Ethernet, WIFI, Bluetooth ...), thanks to the different environmental sensors installed in the building, as well as machine learning techniques based on the data analysis and modeling of systems behavior.



Real time visualization of sensor data analysis linked to an equipment integrated into CARL Source tree structure

Conclusive results:

During the first months of experimentation, the platform recorded and analyzed over a million of measurements / day. In a few weeks, the platform has created "digital twins" of the free cooling / free heating system, identified behavioral models, observed singular modes of operation and highlighted a number of anomalies in the building energy management system that were so far undetectable in the supervision system.

CARL Software technical services have already been able to optimize the operation of the data center cooling system based on recommendations provided by the platform. Today they rely on forecasting guidelines to anticipate the adjustments to make on these systems.

CARL Software, at the forefront of Maintenance 4.0:

With the digital revolution, expectations of maintenance are high. CARL Software focuses its R & D on studying new maintenance uses created by the Internet of Things and by artificial intelligence to integrate them into its CMMS.
In the short term, the publisher plans to connect its CARL Source CMMS to all types of IoT to have necessary planning data for an optimal triggering of preventive maintenance and optimization of equipment operation.
In the medium term, the equipment digital data will be processed and analyzed by the platform which will generate behavioral and predictive models that will enrich the characteristics of the equipment managed on CARL Source and create a "digital twin" of the equipment.

Discover CARL Software digital platform for equipment at:

SMART INDUSTRIE (27/30 March 2018 Paris Villepinte) – **Stand 3 E52 Hall 3 – Maintenance Village**

BIM World (28/29 March 2018 - Paris - Espace Grande Arche la Défense) – **Stand 412**

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About CARL Software

The French publisher CARL Software has been an expert in equipment management and EAM solutions for more than 30 years. With 130 employees in France, Belgium, Italy, and Spain CARL Software has the largest specialized CMMS team in Europe and has several thousand users worldwide.

CARL Source software: CARL Software proposes CARL Source software which is available in 5 industry-specific versions to manage:

- Property and technical facilities: CARL Source Facility
- Local authorities and cities equipment and networks: CARL Source City
- Production facilities and technical equipment: CARL Source Factory
- Rolling stock, infrastructure, networks, linear assets: CARL Source Transport
- Buildings, technical equipment and biomedical equipment in hospitals: CARL Source Santé

CARL Touch Mobile application:

In 2011, CARL Software was the first publisher to propose a touch mode CMMS application on smartphone / tablet. CARL Touch assists technicians during their field work (notification of work to be performed, geolocation, historical work orders, and technical documentation of the equipment to be

maintained, work report dictation, usable without a network connection etc.). CARL Touch also allows monitoring of stock movements, and equipment description and inventory.

CARL Flash Mobile service App:

In 2017, CARL Software launches a new mobile application dedicated to users of assets, equipment or public areas (occupants, visitors, general public ...) allowing them to interact with technical services responsible for maintenance and operations, directly from their mobile device (iOS, Android and Windows).

Press contact: Abrasive

Karine Michaud: + 33 (0) 6 50 61 06 64 / Anne Alba: + 33 (0)4 26 02 92 32 /contact@abrasive.fr