Smart Factory in Record Time: Mechanical Engineering Specialist NMH selects IIoT Solutions from FORCAM

- Real-time analyses of machine utilization and reasons for errors after just one week
- End-to-end digital solution on a wide variety of machines
- "Combinable IT solutions enable us to further develop our production in line with requirements"

Ravensburg, March 2022 - The launch of digitally driven production is still considered a major hurdle by many companies. But with the right technology, a smart factory can be up and running in just a few days – especially for small and medium-sized enterprises (SMEs). This is shown by the example of NMH GmbH from Baden-Württemberg. The company is one of the "hidden champions" for complex measuring, testing and assembly systems.

Together with smart factory expert FORCAM, the mechanical engineering specialist from Upper Swabia connected three pilot machines in record time and integrated four different software solutions into the existing IT architecture. Result: after just one week, NMH workers are working with real-time analyses on

- Utilization of the machines
- Downtimes
- Reasons for errors

NMH Managing Director Christian Bulander: "For our mission of paperless production, we can ideally complement our manufacturing software COCO - ControlCockpit - developed at NMH with FORCAM solutions and thus obtain an end-to-end digital solution on a wide variety of machines. The FORCAM approach of combinable IT solutions based on an open platform enables us to further develop our production in line with requirements."

Seamless interaction of all IT systems and apps

NMH sets new standards in ecological action with the COCO manufacturing software for paperless production: All manufacturing processes are centrally controlled, checked and managed. COCO integrates all applications in real time - machine status, planning board, call-up of drawings, feedback on manufactured quantities, location of items and post-calculations. Every employee and all areas always have up-to-date and complete data.

The FORCAM solutions fit seamlessly into this architecture - the connection of all machines, the real-time evaluations via machine data acquisition (MDA), the networking with the planning level (ERP). Further joint plans include the use of the apps for overall equipment effectiveness (OEE) and energy monitoring, as well as the connection of robots in the future.

IIoT technology intelligently composed

Under the umbrella brand FORCAM FORCE, companies can find solutions and components for a wide range of needs - from standardized smart factory package solutions to individually combinable IT architectures with cloud edge computing to globally scale connectivity of heterogeneous machine parks.

The customer decides which solutions are used in which composition. In the first step, NMH uses the FORCAM solutions for machine connectivity and for standardized real-time analyses from the cloud (Software as a Service - SaaS).

- Laying the foundation: Connecting machines, preparing signals
  Mechanical engineering specialist NMH uses the FORCAM FORCE **EDGE** solution to digitally connect all machines smoothly, regardless of year of manufacture or manufacturer. The flexible platform solution contains various components - for example, the smooth connection of all machines via plug-ins, the harmonization of signals into a uniform data set (Machine Twin) and comprehensive data storage (Data Lake). All common interfaces are available for forwarding the data to higher-level systems (HTTP/REST, MQTT, OPC UA).

- Creating transparency through standardized evaluations
  In the next step, NMH GmbH also uses the FORCAM FORCE **SAAS** software-as-a-service solution to evaluate availability and the reasons for faults on five machines. Standardized real-time analyses for machine availability (MDA) as well as for overall equipment effectiveness (OEE) create transparency and empower employees for continuous improvement. The basic hardware is supplied, the software operates in the Azure Cloud, from where the workers receive the evaluations on their terminals.

- Open up perspectives with further MES apps (Manufacturing Execution System)
  In order to be able to optimize power consumption in production in particular, NMH plans to integrate further software solutions, for example energy monitoring. FORCAM offers this application together with numerous turnkey MES applications (Manufacturing Execution Systems) in the FORCAM FORCE **IIOT** solution. Together with the FORCAM FORCE EDGE solution, companies can compose individual IT architectures in hybrid IT infrastructures (on-premise, edge, cloud).

About NMH - www.nmh.de | www.nmh-coco.de

NMH offers solutions in plant engineering, mechanical engineering and special machine construction - individual, precise, reliable. The company, based in Hohentengen (Baden-Württemberg), is one of the "hidden champions" for complex measuring, testing and assembly systems as well as software solutions. The company offers complete solutions from development and production to assembly and commissioning. Customers in Europe, Asia, North and South America as well as in Africa trust in the quality and the innovative power of NMH. Company motto "Innovation is our world" - behind the innovative power of NMH is a high-performance team of around 100 employees.

About FORCAM

FORCAM GmbH is a pioneer of Industry 4.0: Since 2001, FORCAM has been helping industrial companies worldwide to sustainably increase their competitiveness. To this end, FORCAM delivers modular IIoT solutions based on award-winning platform technology for cloud/edge computing. FORCAM customers include Audi, Bizerba, BorgWarner, Daimler, Krones, Lockheed Martin, Reich GmbH, Schaeffler and Swarovski Optik. FORCAM is headquartered in Ravensburg (Baden-Württemberg), with offices in France, England, the USA and China. www.forcam.com

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