IK4 TEKNIKER
Research Alliance

Press release

Proactive machinery maintenance

- *The new solution that IK4-TEKNIKER is jointly proposing with Ibermática will allow machine tool condition to be checked and anticipate anomalous operating situations*
- *This system will assist decision-making practices related to O&M and prevent faulty parts from being manufactured*

(Eibar, Basque Country. 30 May, 2019).- The machine tool sector wants more highly accurate, added value machine tools and systems to facilitate their maintenance; a critical and essential task to keep equipment running smoothly and maintain suitable productivity levels.

The possibilities offered by machine tools as regards compiling, transmitting and analysing large amounts of data are associated with valuable information that allows productivity to be increased.

By compiling data supplied by machine controls and sensors, continuous and real-time information can be given to users on the status of production processes, on quality parameters associated with the components being made and on the changing environment that surrounds production.

Predictive models based on data help to predict machine behaviour. This minimises the risk of breakdowns resulting in unscheduled production shutdowns and significant economic damages.

Moreover, an infrastructure is required to collect, process, store and run all the data for a correlation to be established with the real condition of the components and machine to discover their in-use behaviour and improve the system's diagnostic and predictive capabilities.

Monitoring based on condition and data management

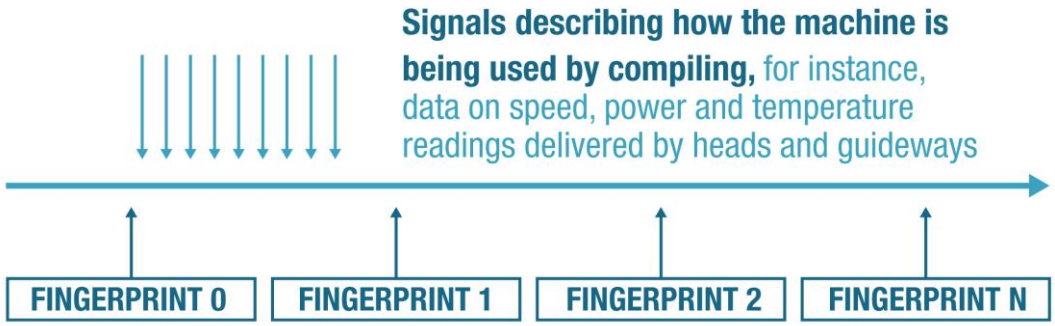
In a joint effort with Ibermática (an ICT supplier), IK4-TEKNIKER has developed a data management and monitoring solution to learn more about the **health status of critical machine tool components and detect of anomalous operating situations as early as possible.**

This tool has been designed so that equipment manufacturers can provide their customers with advanced maintenance solutions and allow end users to ascertain that their equipment is running correctly.

The solution has been adapted to the capabilities of industrial firms in terms of conductivity and integration and is able to collect and interpret any information that provides added value in terms of a machine's health status.

To pick up internal and external signals delivered by controls and sensors, IK4-TEKNIKER suggests that a number of very straightforward and fast machine tests be run to learn about a machine's status by looking into how it has evolved over time with regard to a number of

parameters. This is what IK4-TEKNIKER calls “machine fingerprint”. In this manner, it becomes possible to check how well machines are running and monitor them in a controlled manner.



Hardware that can be connected to different machine tool CNCs is used to collect information, in addition to gathering information via sensors installed on the machine itself.

This system allows you to discover the health status of a machine and supports decision-making in terms of operation and maintenance. The production of faulty parts can also be prevented and progress can be made towards "zero defects" which is fundamental whenever expensive parts are involved.

But it is not only about gathering information; acquired data is processed to obtain aggregations and calculations to facilitate processing on the management platform.

Data post-processed by Fingerprint tests and operational data delivering knowledge on what is actually happening on the machine tool is sent to a platform that gathers, processes, stores and exploits data and establishes a correlation with the real condition of components and machines to monitor their behaviour in use, improve system diagnostic and prediction capabilities and, ultimately, facilitate decision making to improve machine tool performance.

Concerning IK4-TEKNIKER

With more than 35 years of experience in applied technology research that has been be transferred to companies, IK4-TEKNIKER has achieved a high degree of specialisation in four major areas (Advanced Manufacturing, Surface Engineering, Product Engineering and ICTs). This means that its cutting edge know-how has been made available to customers to meet their requirements.

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Further information

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