MAINTENANCE AND QUALITY DECISION-MAKING IN THE CONTEXT OF THE INDUSTRY 4.0

Description

The Fourth Industrial Revolution is moving towards what has been called a "smart factory". It includes predictive maintenance based on the use of monitoring technology and the IoT sensors. In this context, production is increasingly organised as "batch-process" production, particularly in the context of mass customisation of products. All the information available in production can be used to anticipate changes towards degraded operating modes that lead to non-compliant products. This special session focuses on joint consideration of quality control and maintenance decision-making from both industrial and academic points of view.

Motivation

In practice, the units responsible for maintaining the production system and those responsible for ensuring product quality are different and often communicate very little with each other. Most companies engaged in a digitisation process claim to have a lot of data, but often find it difficult to extract relevant and usable information. Faced with these difficulties, they mostly continue to use simple supervision methods. The rapid development of computing capacities and significant theoretical advances in the fields of statistical process control and predictive maintenance make it possible to envisage the development of new integrated product/process approaches.

Objective

The objective of this special session is to bring together the views of academics and industrialists in order to exploit all the information available in production, including the control parameters of the production system and the characteristics of the products, so as to anticipate changes towards operating modes that lead to non-compliant products and to optimise maintenance actions.

Organizers

Amélie Ponchet Durupt, Univ. of Technology Compiègne, amelie.durupt@utc.fr

Antoine Grall, Univ. of Technology Troyes, antoine.grall@utt.fr