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CNR - NATIONAL RESEARCH COUNCIL
HEADQUARTERS - **Piazzale Aldo Moro**

CALL FOR PAPERS for the Special Session on DATA QUALITY: A NEW IMPERATIVE FOR MEASUREMENT SYSTEMS IN THE INDUSTRY4.0 ERA

Industry 4.0 has pushed on-line quality control to be distributed along the production line, rather than concentrated at the end of the line as it used to be. This shift in quality approach makes it possible to detect and react to anomalies before the product/component is delivered and becomes mandatory to target both quality control on 100% of the production and hence zero defect manufacturing. However, in a real production scenario, availability of data does not itself guarantee an effective information build-up. Reliability of data hence becomes the real problem to be tackled.

To ensure reliability, sensors, actuators and instruments need to provide adequate levels of accuracy and precision. This means, for instance, that they should adapt to/compensate for adverse physical conditions under which they are forced to operate (e.g. varying temperature).

The Industry 4.0 compliant quality control systems should then be designed to exhibit real-time adaptive behaviors to keep measurement uncertainty under control even in case of variations of process or product or instrument parameters. Furthermore, processing of data allows to derive synthetic quality indicators, as well as to implement self-diagnosis and self-calibration to maximize the confidence level of the measurement system output and of the diagnostic judgment.

This session aims to collect papers describing measurement systems and quality control stations capable of ensuring reliability of data provided, as well as papers dealing with the strategies to take into account issues of uncertainty and confidence level of measured data, calibration of measurement systems, smart management of sensors, etc.

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