PUBLIC SELECTION BASED ON QUALIFICATIONS AND INTERVIEW FOR THE AWARDING OF NO. 1 GRANT LASTING 12 MONTHS FOR CONDUCTING RESEARCH IN ACCORDANCE WITH ART. 22 OF LAW OF 30.12.2010 NO. 240 AT THE DEPARTMENT OF MANAGEMENT, INFORMATION AND PRODUCTION ENGINEERING THE UNIVERSITY OF BERGAMO (ACADEMIC RECRUITMENT FIELD 09/B2 – INDUSTRIAL MECHANICAL SYSTEMS ENGINEERING - ACADEMIC DISCIPLINE ING-IND/17 – INDUSTRIAL MECHANICAL SYSTEMS ENGINEERING (CUP: E47H16001570009).

announced with decree of the Rector Rep. no. 49/2018 of 19.01.2018 and posted on the official registry of the University on 19.01.2018

RESEARCH PROJECT

TITLE: "Design and test of diagnostic algorithms for industrial machines "

The goal of the research project is developing a model and a prototype afterwards for real-time monitoring of production systems in order to make company assets more efficient, decrease operative costs and provide a "zero defect" manufacturing. Thus, the project is focus on develop tools, hardware and software, which can help machines vendors and customers to improve their competitiveness on market. The research activities foresee intelligent sensors integration on actual machines which allow to monitor working condition of critical components real-time and eventually verify mechanical and electronical fails. At the same time, the researcher has to identify tools and algorithms act to elaborate data gathered supporting decision making.

Research program goals are now briefly described:

Identification of characteristic parameters and measure chain: this activity is turned to characteristic parameters identification and KPI definition of critical items. This enables the develop of diagnostics algorithms subsequently to instruments and sensors definition as well as the measure chain for data mining.

Development and test of diagnostics algorithms and real-time monitoring system on industrial demonstrators: this activity regards the development of diagnostics algorithms and a monitoring system afterwards integrated in the machine program in order to validate robustness and reliability during working condition. Finally, the test phase foresees the evaluation of the quality and costs needed to (i) execute locally or remotely maintenance operations, (ii) setup the machine in production (iii) make the developed tools scalable.