

START DATE: 1 OCTOBER 2013
DURATION: 36 MONTHS
TOTAL BUDGET: € 5.1 MILLION
FUNDING: € 3.6 MILLION

PROJECT OVERVIEW

T-REX is a research project funded from the European Commission under grant agreement n° 609005 that promotes **integrated product-service solutions or product-service systems** that allow a shift from value in exchange to value in use to satisfy customer needs.

The project gives support for the transition, in the capital goods industries, from the "traditional" business models to the "new" business model. This objective has been achieved by developing and experimenting conceptual tools for different domains, i.e. machine tools, transportation (forklift trucks) and robot solutions. T-REX has developed:

- **A business model** suited for the new landscape that changes the way products are offered and customer relationships managed
- **Product design techniques** to extend the lifecycle, to foster upgrading and renovation, and to support serviceability
- **Service design methods** engineering existing services
- **Tools for asset health management** customizable to the industry requirements and a new lifecycle oriented accounting tool

FIDIA INDUSTRIAL OBJECTIVE

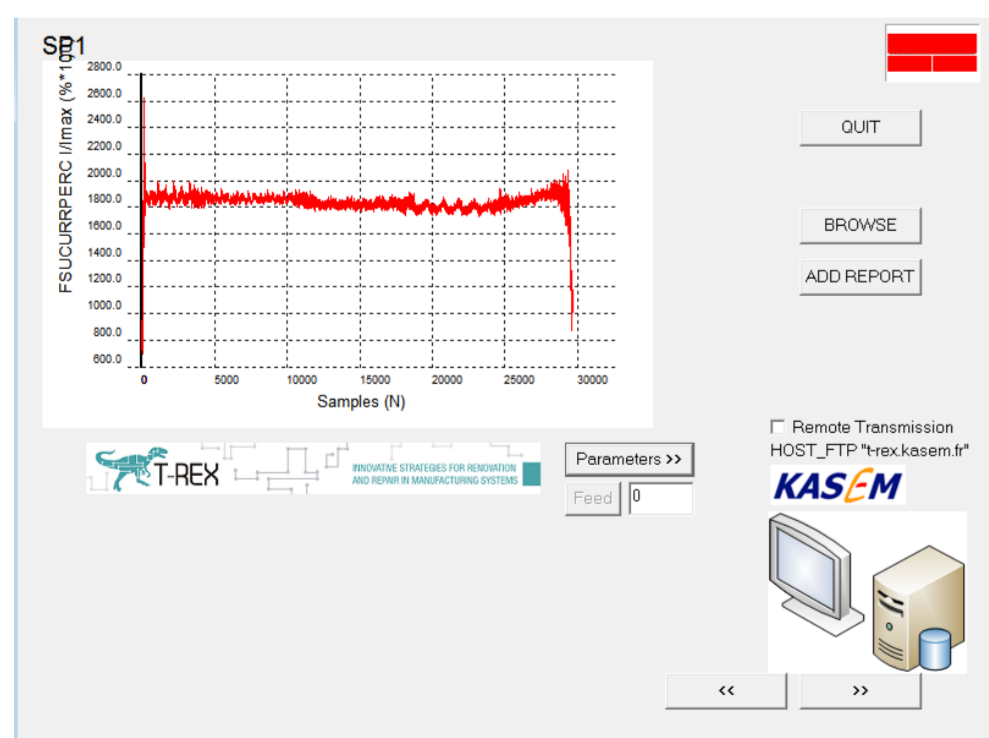
Being a machine tool builder in advanced sectors as automotive and aerospace FIDIA faces everyday a fierce competition in B2B market. Within the project, as partner of the T-REX consortium, FIDIA aims at achieving **maintenance improvements at service level**.

That is why FIDIA has focused on the realization of Product Service System to gain competitive advantage among competitors trying to implement the so called "Servitization".

T-REX offered the right context with combination of **technological and process innovation** and **business model innovation** to reach FIDIA industrial objectives. To pursue Servitization, FIDIA is developing a diagnostic SW tool able to **predict incipient malfunctions** of the component and **avoid sudden breakdowns**. The quality of service offered to key customers is highly improved from the availability of the new additional electro-spindle service.

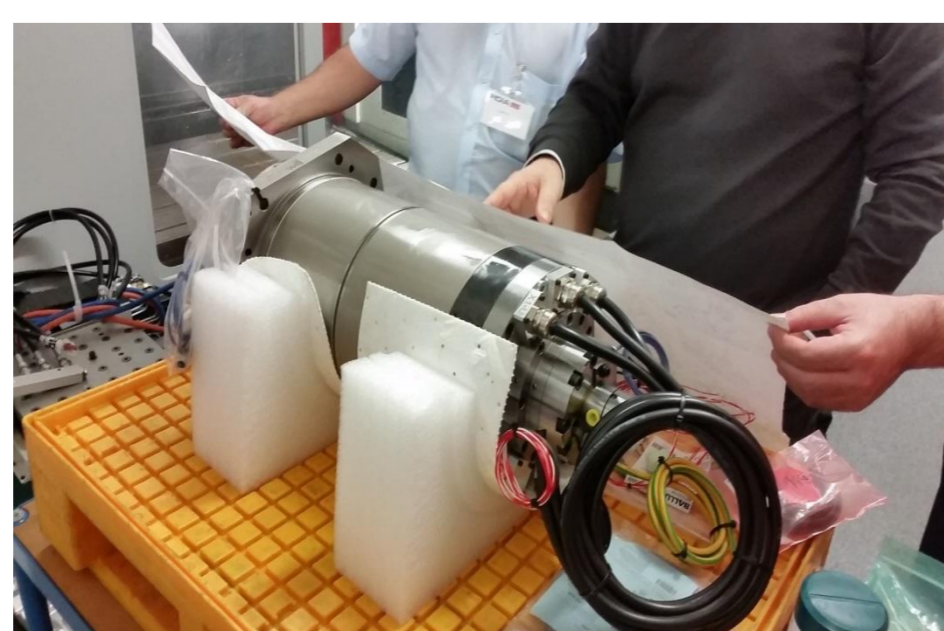
EXPLOITABLE RESULT

The overall Service solution proposed in T-REX is called **Condition Based Maintenance (CBM) for new generation machine tool electro-spindles**. It exploits the features of the new family of IMATECNO electro-spindles that has been re-designed (shift from a purely performance to a reliability driven concept) and also equipped with new sensors that allow the machine tool builder to retrieve essential data about the working and operating conditions of the component. The new developed software application (performing some tests and collecting data from the field) enables FIDIA to offer its customers a new solution with predictive capabilities to improve productivity avoiding sudden interruptions in machining of workpieces due to breakdowns. This **increases machine availability and lowers Total Cost of Ownership (TCO)** for customers.



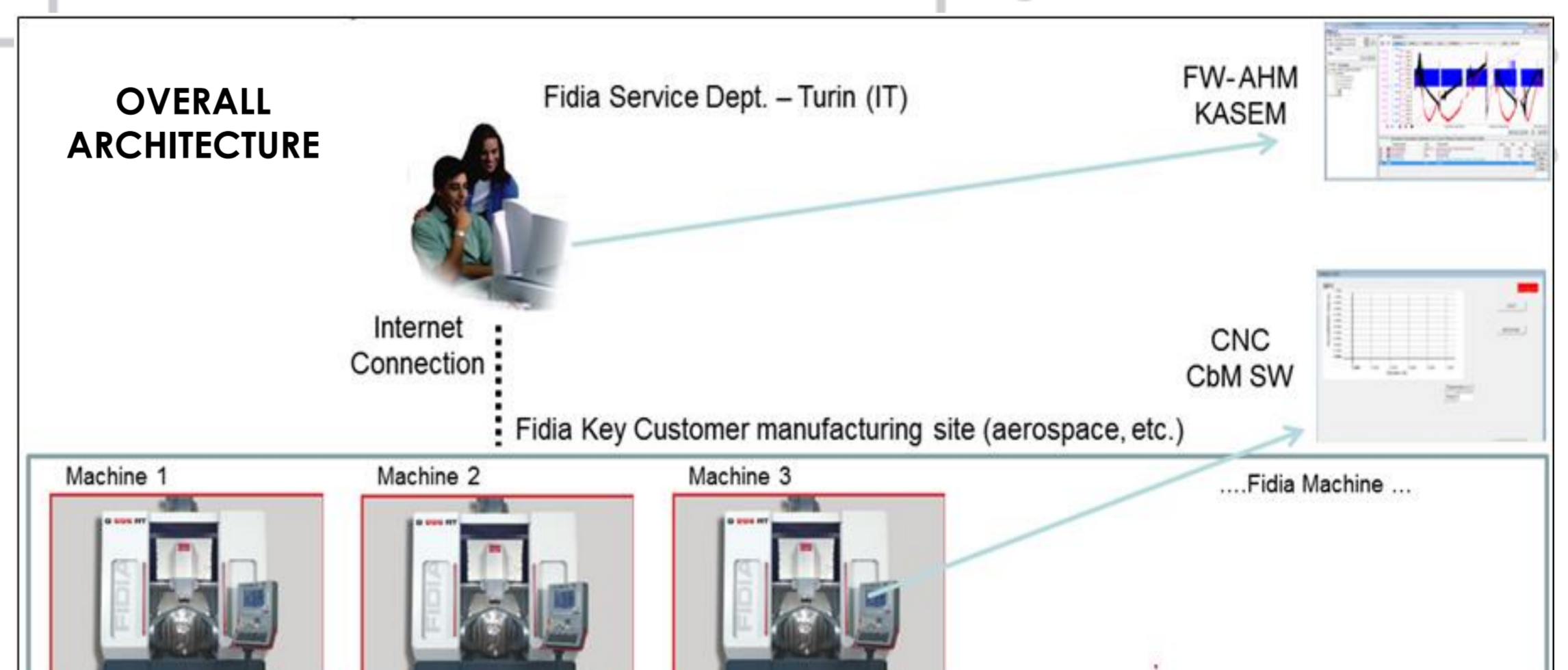
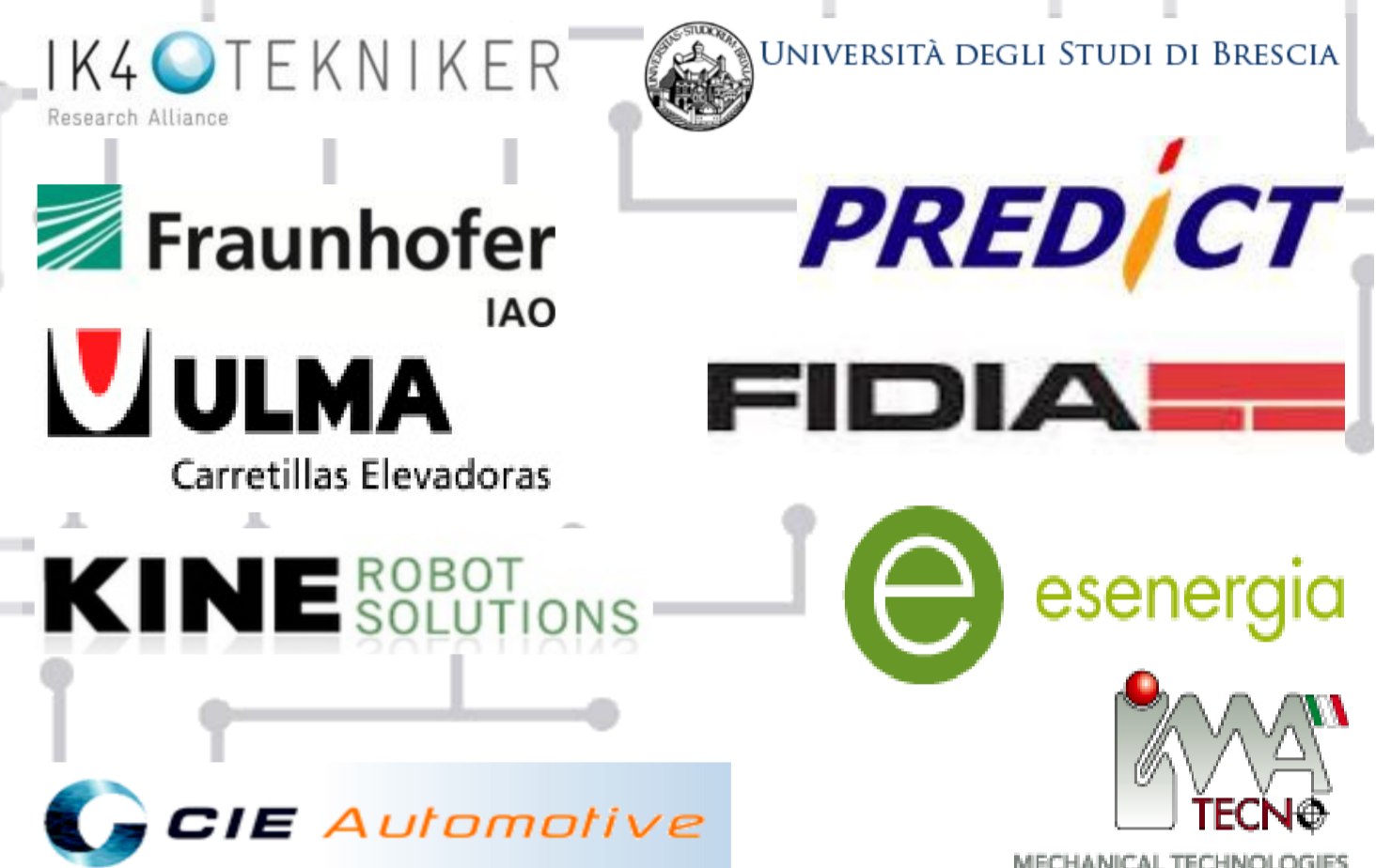
Graphical User Interface of the SW tool developed by FIDIA and running on FIDIA CNCs for electrospindle diagnostics. It allows the remote transmission of recorded data through the internet.

New electro-spindle designed by project partner IMATECNO and interfaced with FIDIA CNC. It is equipped with several sensors to improve reliability and diagnostics of the component.



CONSORTIUM

T-REX consortium consists of **10 partners from 5 countries** to ensure that results from the project will be widely disseminated and implemented in Europe. The project is conceived as a co-operation at European level with the involvement of key players in the European machinery, robotics and handling sectors.



Novelty/Unique selling point

- Low cost and easy to deploy solution for electro-spindle Condition Based Maintenance
- New sensorized part design
- Fleet management capabilities