Made in IBM Labs : les scientifiques d'IBM insufflent la mobilité dans le domaine du MRO (maintenance, réparation et révision)

Grâce à un système combinant la réalité augmentée et la robotique, les ingénieurs de terrain accéderont à des informations essentielles et à l'avis d'experts à distance

Paris, France - 25 avr. 2013: Les scientifiques d'IBM dévoilent aujourd'hui un prototype de maintenance, réparation et révision (MRO) mobile conçu pour aider les industriels et les entreprises approvisionnant et entretenant des machines de grande valeur dans les secteurs tels que l'aérospatiale, l'industrie du pétrole et du gaz et le transport maritime.

Ce système mobile, qui utilise une combinaison de réalité augmentée et de robotique, fournira des informations essentielles aux ingénieurs de terrain et les aidera par exemple à localiser avec précision les équipements. Ils recevront également en temps réel le soutien visuel d'experts en supervision basés à distance.

Le nouveau système permet également à un superviseur de suivre les avancées de l'ingénieur quant à la maintenance du site à l'aide d'un GPS. Une fois sur le site, l'ingénieur peut utiliser un smartphone et des codes QR pour localiser et identifier un actif et recevoir des instructions de maintenance.

Richard Lanyon-Hogg, directeur technique IBM pour le secteur industriel, déclare : « *Ce prototype MRO réunit 2 technologies IBM innovantes, développées par nos laboratoires de recherche européens de Hursley et Haifa en une solution unique pour nos clients. Elle permet aux industriels de réduire leurs coûts, de bénéficier d'un transfert de connaissances au bon moment et de diminuer le risque humain pour des ingénieurs travaillant dans des environnements difficiles* ».

Ce projet est le fruit d'une collaboration entre IBM et l'Université de Sheffield Advanced Manufacturing Research Centre (AMRC).

Made in IBM Labs: IBM scientists unveil prototype that will put 'Smart mobility' into maintenance, repairs and operations

Using a combination of augmented reality and robotics the system brings critical information and remote expertise directly to field engineers

Hursley, UK - 22 April 2013: Scientists from IBM (NYSE: IBM) revealed today a mobile maintenance, repair and operations (MRO) prototype which is designed to help manufacturers and companies supplying and maintaining high-value machinery in sectors such as aerospace, oil & gas and shipping.

The mobile system, using a combination of augmented reality and robotics, will help field engineers accurately locate equipment, provide them with critical information and receive real-time visual support from supervising experts based remotely.

Today MRO tasks typically involve an engineer visiting a site, finding the right machine, and making sure they have an appropriate task sheet. If they run into difficulty, they might call for help from a remote supervisor or product expert.

The new system allows a supervisor to monitor an engineer's progress towards the maintenance site, using GPS. Once on site, an engineer can use a smart phone and QR codes to locate and identify an asset and receive maintenance instructions. The smart phone uses augmented reality technology to overlay points of interest over a plan of the site, which can include the location of other engineers, first aid stations and health and safety apparatus.

If assistance is needed, a remote expert is able to view the on-site engineer's workspace and support them with real-time video and audio links using a camera and a small projector mounted at the end of a remotely controlled robotic arm. The expert, from his management console, is also able to project a pointer and valuable information such as free-hand sketches, assembly instructions and CAD images directly onto the workspace or a nearby wall.

Richard Lanyon-Hogg, IBM Technical Director for the industrial sector, said: "The MRO prototype brings together two innovative IBM technologies, developed in our European research labs in Hursley and Haifa, into a single solution for our clients. It offers manufacturers the opportunity to lower their costs, provide just-in-time knowledge transfer and reduce the personal risk to engineers working in difficult environments."

Studies have shown that remote support is much more efficient if on-site and remote engineers can share a visual representation of the site workspace and the on-site engineer's actions. To date this has been accomplished, and only in part, by on-site engineers using hand-held cameras, mounted head-gear or specialist glasses. The new system provides the supervisor with complete visual independence and a more stable video image; on-site engineers are able to work with greater freedom or, in the case of those with specialist glasses, freed from the tiring need to re-focus their eyes.

The expert's ability to deliver critical information can also be further enhanced as the fully working prototype is adapted and integrated with a company's specific MRO operations, asset management solutions such as IBM

Maximo and Product Lifecycle Management systems. The ability to direct data to either the engineer's mobile phone or the robot's projector adds a further dimension to the system's portability and flexibility.

The project is the result of a collaboration with the University of Sheffield Advanced Manufacturing Research Centre (AMRC). The AMRC is responsible for identifying, researching and resolving advanced manufacturing problems in order to help businesses become more competitive through the application of new techniques, technologies and processes. It is part of the High Value Manufacturing Catapult, a network of leading manufacturing research centres backed by the UK government.

Dr Rab Scott, Head of the Virtual Reality and Modelling Group AMRC, said: "IBM's MRO prototype is an exciting addition to the innovative toolset used by the AMRC's researchers and engineers. We hope to demonstrate its usefulness and versatility in a number of situations within the manufacturing arena."

The new system exemplifies how a new wave of mobile computing is revolutionising how businesses can transform their processes. Data from existing back-end systems is increasingly placed in the hands of front-line employees. Social media too is transforming the way employees are able to interact, by extending the reach of organisational expertise at minimal cost.

A fully working IBM MRO system has been installed at the AMRC's Diamond Jubilee Knowledge Transfer Centre.