

Press Release

AERTEC Solutions collaborates with Airbus UK using Virtual Reality Technologies

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- **As part of the Future of Aircraft Factory Project, Aertec Solutions visited Airbus Filton's new virtual reality suite to demonstrate the layout design of a new pre-production facility concept.**

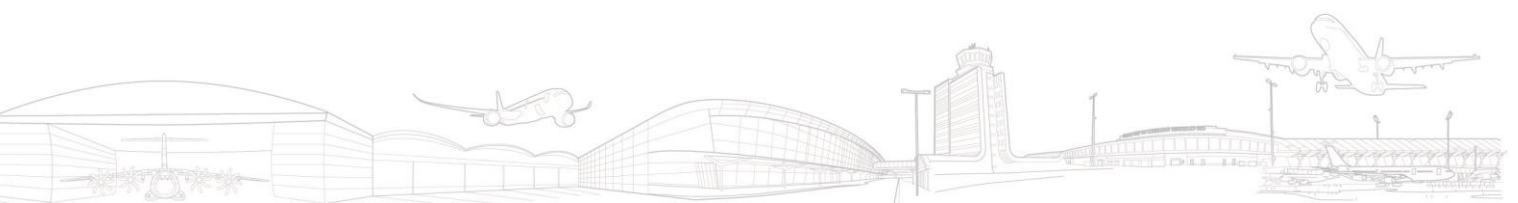
24th July 2017.- Virtual reality enables a detailed visualisation of a factory environment before its implementation. As part of the Future of Aircraft Factory Project, Aertec Solutions visited Airbus Filton's new virtual reality suite, to demonstrate the layout design of a new pre-production facility concept. The Airbus virtual reality suite was commissioned in April 2016 and uses the latest computation and projection technology. A CATIA model developed by Aertec was used as the input to the VR system, which then takes the CAD data and creates an incredibly lifelike experience for the user.

Airbus' VR suite accepts many different CAD file formats, which enables new models to easily be created and then trialled on the system. The main hardware consists of a projection screen with a short throw projector. Multiple users can wear 3D shutter glasses to experience the projected image in three-dimensions.

For the full VR experience the user needs to put on the VR headset. This provides an immersive 3D experience by providing a field-of-view which covers the users entire visual field. As the user moves their head, their movements are tracked by the Infrared tracking system, enabling the system to update the view so as to mirror their real movements in the virtual world. This helps to create a very intuitive experience for exploring the virtual facility. The user also holds a handheld controller, which allows them to move around the virtual environment.

Airbus' system can also be used with a VR 'Bodysuit', which consists of multiple pads attached to different areas of the body, enabling many movements to be tracked. This enables the user to see themselves in the simulation which adds even more to the realism.

The new facility model contains everything from handheld tools, to large jigs and assemblies. The Airbus system provided very smooth motion of the model in accordance with the movement of the user's head and body. This is very important to prevent the user from losing balance and falling over! As the scaling of the model in the system was set 1:1 with real life, this gave the impression that the user was really present in the facility. Whilst wearing the bodysuit, your hands, arms and legs appear



in the same position as they are in reality, which enabled the user to pick up and interact with virtual tools as if they were real.

The intuitive nature of the VR system helped Aertec to get a far better impression of the space within the facility, than could be obtained from the CAD model alone. The true size of a piece of equipment becomes immediately apparent, unlike in a CAD model. This particularly helps those who are not familiar with CAD/technical drawings to get a very good impression of the layout design. Another benefit was that the ergonomics of the processes could be tested very effectively in the virtual environment. In many cases VR removes the need for constructing physical prototypes, saving much expense. In the case of a large facility, building a life-size prototype is clearly not feasible, and so this tool provides a very effective way of demonstrating a facility's capabilities. VR has many more applications, such as a training tool for operators. The operator can gain an intuitive experience of carrying out a particular task, and can enact scenarios relating to dealing with anomalies, which may be very difficult to simulate in the real world. This enables the operator to become familiar with the process, without disrupting the production line.

Future developments of VR may include the integration of positional sound and tactile feedback. This will make the experience appear even more realistic, providing more effective testing of a facility. Overall, Aertec believes that virtual reality provides an especially useful facility design tool for the aerospace industry of the future.

About AERTEC Solutions

AERTEC Solutions is an international engineering and consultancy firm specialising in aviation. The company has references from more than 100 international airports spread over 40 countries in five continents and has a presence in the world's largest aeronautical programmes, including the A350XWB, A400M, A320 and A330MRTT programmes, among others.

The company is currently a Tier 1 preferred supplier of manufacturing engineering and programme management services to the Airbus Group for its civil and military aircraft, in addition to providing its know-how and experience in industrialisation activities, manufacturing support, assembly and design, production support and testing system engineering.

The company employs a team of over 500 professional experts in aeronautics and has offices in Spain, the United Kingdom, Portugal, Colombia and the United States.

The company is celebrating its 20th anniversary this year by putting together a programme of commemorative actions and events that, towards the end of the year, will include a professional congress on airports. It is also holding monthly working breakfasts with a variety of relevant players in the technology and aerospace areas, with whom it is sharing its vision for the next 20 years.

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