



The ESA Business Incubation Centre in Darmstadt, Germany, was founded in 2007 and is managed by Centrum für Satellitennavigation Hessen (cesah). The centre offers business start-up support as well as technical expertise in different space related areas, and in particular in satellite navigation, data systems, software systems and navigation test environments.

EMTech GmbH

**Real-Time Co-simulations, Information Fusion and Simulation Analytics for
Decision Support Systems**



EMTECH
EXCEL MICRO TECHNOLOGIES

Website

Founded in 2014 by

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Incubation period

01-01-2015 to 30-12-2016



space solutions

About EMTech GmbH

The mission of EMTech-GmbH is to focus on complex real-time co-simulations, information fusion and simulation analytics for Decision Support Systems (DSS), using the existing spacecraft operational simulators' infrastructure. Our vision is a future, augmented with high-end virtual engineering worlds using artificial intelligence, supporting engineers to build reliable concepts, and providing end-users with tools to achieve optimized operations.

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The challenge

An intelligent Decision Support System (DSS) functions much like a human brain: It connects to the outside world through the senses and the actuators of the body, it

analyses the situations by correlating with past experiences, and chooses a course of action by projecting its effects on the future. In the same manner, a software performing the above actions actually needs to handle data from three different data perspectives: Historical Information (Databases), Monitoring & Control Information (in Real-Time), and Prediction Mechanisms (simulation). Today, the major challenge for making decisions in several domains, is the availability of huge data volumes and rapid change of data and metrics. Business and operational managers need “live” information feeds to make effective and on-time decisions. The conventional DSS are insufficient to provide low latencies needed for making decisions in this rapidly changing environment; thus challenging the necessity of real-time DSS.

The solution

EMTech-GmbH offers the FusiX SaaS framework. It is an innovative information fusion engine, targeting to provide a complete environment for fast, easy and safe development of state-of-the-art real-time DSS. The FusiX platform addresses all needs regarding dynamic and abstracted fusion of information from any number and type of system, by performing: Interfacing with external resources, Processing of information, and Conceptualization of processed information using appropriate meta-models. FusiX natively integrates database support, simulation support, a dynamic GUI builder and other common DSS features. Key innovation point is transparent integration with a complex simulation environment, facilitating real-time cooperative simulation in a highly distributed manner. The simulator’s cornerstone is the SIMSAT, which is the simulation engine designed and developed by ESA/ESOC, for all space missions requiring a spacecraft operational simulator.
