

AviationSimNet®

Widely regarded as an effective way to study many Air Traffic Management (ATM) issues, real-time human-in-the-loop simulations can benefit from a flexible laboratory networking system that allows faster, easier, and more productive collaboration.

AviationSimNet® is an Open Set of Specifications and Standard Simulation Technologies Defined by the ATM Research Community

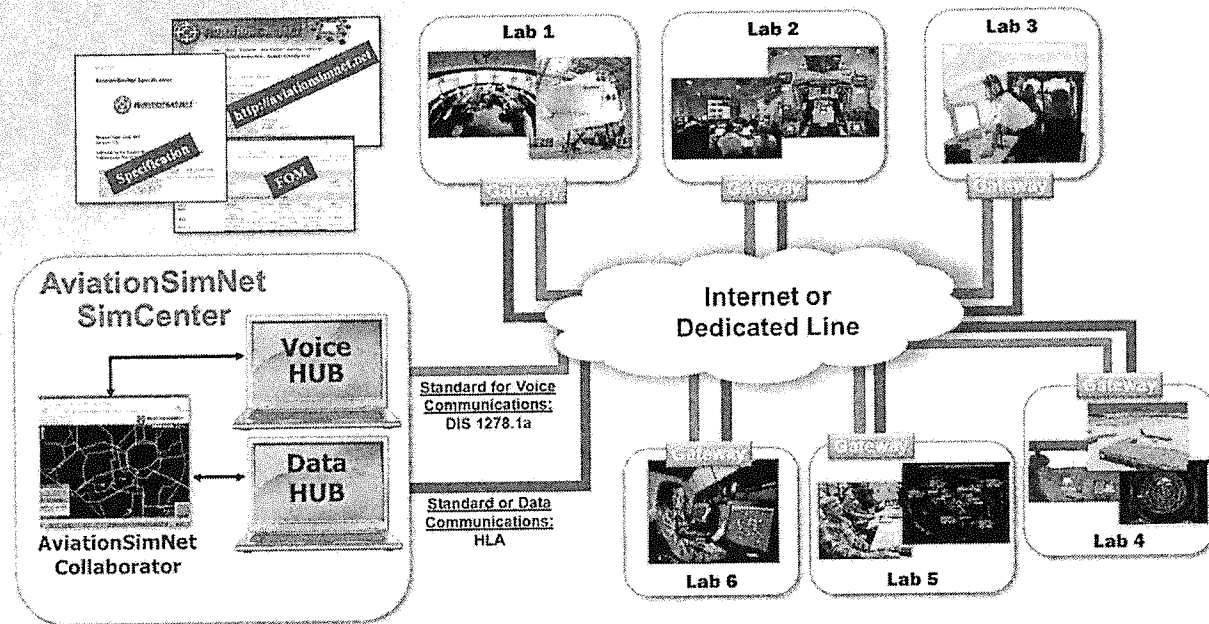
Those standards are implemented in a software environment that enables ATM simulation labs anywhere on the global Internet to conduct a distributed, real-time simulation using voice and data communications. Launched by The MITRE Corporation's Center for Advanced Aviation System Development (MITRE/CAASD) in 1995,

AviationSimNet has spread across aviation laboratories in government, industry, and academia, bridging various simulators into a common research environment.

AviationSimNet Participants

Adacel Technologies Limited, The Boeing Corporation, Center for Applied ATM Research at Embry-Riddle Aeronautical University, Eurocontrol, German Air Navigation Services, Research and

A Community-Defined Air Traffic Management Simulation Environment for Defining the Next Generation Air Transportation System



MITRE

Development Center (DFS), Federal Aviation Administration (FAA), German Aerospace Center (DLR), John A. Volpe National Transportation Systems Center, Lockheed Martin Transportation and Security Solutions, MARINVENT Corporation, MITRE/CAASD, National Aeronautics and Space Administration (NASA) Ames Research Center, NASA Langley Research Center, Netherlands National Aerospace Laboratory (NLR), Raytheon, Rockwell Collins, and the United Parcel Service (UPS).

AviationSimNet Promotes Collaboration, While Cutting Costs, Time, and Risks

Organizations with complementary areas of expertise can use AviationSimNet to collaborate with each other, enabling more ambitious ATM studies. Existing simulation assets at different locations can exchange information over standard protocols. Participants need only invest in bridging their communications layer with the Institute of Electrical and Electronics Engineers (IEEE) High Level Architecture (HLA) for simulation data, or

with the IEEE Distributed Interactive Simulation (DIS) for voice communications. Both protocols exercise a central network hub to collect and deploy data packets. Any organizations with network access to the common hub can conduct a distributed experiment involving all of their simulation assets, without requiring any inbound network connections. AviationSimNet facilitates the opportunity to perform a wide range of critical cross-system, cross-domain ATM studies of new concepts, technologies, and procedures.

Reusable, Reconfigurable

The AviationSimNet object model describes the events that can be exchanged in a simulation. It is community-compiled and driven by research needs. The model and specification are published openly so that AviationSimNet members can readily participate in any distributed simulation. The voice network supports controllers, pilots, and frequencies and provides for pilots to dynamically change frequencies during all phases of flight.