BELOW: STARSim installation in Nantes

STARSim

The French Evolution of ATCO Training

Vincent Lambercy takes us through the evolution of ATC simulator training in France

Jérémie Bayle and the STARSim project team are transforming Air Traffic Controller (ATCO) training in France. They deployed ATC simulators based on the ATTower software suite provided by UFA, Inc. at 11 airports over three and a half years, making local training a reality. Until then, tower and approach simulation training was mostly done centrally at the École Nationale de l'Aviation Civile (ENAC) in Toulouse, except for some major centers.

Having tower and approach simulators at 11 airports facilitates training in multiple ways. One obvious aspect is that trainees don't have to travel to Toulouse, which saves both time and cost. At some airports, the staffing situation was sometimes so tense that ATCOs going to ENAC for a training session meant that the ATC services had to be reduced, sometimes making the airport Aerodrome Flight Information Service (AFIS)-only.

A simulator on-site makes it possible to arrange training sessions almost spontaneously. Bad weather day? Open the simulator and make the best possible use of the training time. Too many good weather days for training low-visibility procedures? Organise just a few hours of extra training, on site, specific to this topic.

Each of the 11 simulation platforms also supports partner airports. For example, the simulator in Nice can simulate Cannes airport and soon airports in Corsica, too. This allows for an optimal use of the simulators, reduces travel for ATCOs and even results in shorter training times because the same number of hours of instruction can be given over a shorter period of time. Even better: some of the partner airports did not have a simulator configuration available at ENAC and the STARSim project was the chance to make it available. This also reduced the total training time required for site qualification.

Unified software on different hardware

One basic principle for the STARSim project is to use the same software for all installations, but adjust the hardware to meet local requirements. In Jérémie's own words: "Using the exact same system everywhere results in a training process that is almost good for everyone. We aim to make it the best for everyone". Depending on the relative positions of the tower, the runways and the traffic patterns, airport simulators require different hardware setups.

Paris Charles de Gaulle has the largest setup, with a full 360-degree display, and the smallest one is installed in Toussus, a very busy general aviation airport close to Paris. Toussus' simulator has three screens for the out-of-the-window view and an extra screen on wheels where trainees can look for aircraft on the downwind leg, which is physically behind their back.

The software also supports modern devices, like the virtual reality googles which are available to the trainees in Toussus. The trainees' feedback on the googles is good so far, for training sessions of 30 to 40 minutes. Jérémie once got feedback that the trainee felt it was strange to have to turn around to look behind their back; but this is exactly what they have to do in reality.

Simulators fitted with a shoehorn

Being able to offer hardware configurations of all sizes is a double-edged sword. It is natural to request more than one really needs and Jérémie has to be careful and balance needs with available budget. The savings were primarily done in two aspects: using only the necessary hardware for the out-of-the-window view and using standard furniture instead of expensive operational consoles.

Another constraint influenced the hardware setup of each of the 11 simulation platforms: they had to be installed in existing rooms, without additional civil engineering work. The ability to run the same software on different hardware made it possible. In one case, the simulator was set up in a standard office that someone gave up only to start sharing an office with a colleague. Besides the anecdote, this shows real acceptance for the project and its deliverables.

Remote connections and voice recognition in the future

This network of 11 simulators across France also opens new possibilities in the future. Training could take place at multiple airports at the same time, running complex exercises. Connecting simulation platforms to another, it is possible to share resources and working positions. For example, if one site is missing pseudo-pilots and some are available somewhere else, they could be made available without having to travel. Some cybersecurity questions are still open but the simulation software allows for it.

Jérémie and his team are also experimenting with voice recognition and response (VRR), to make simulation even more flexible. But one lesson learned from the success of STARSim is that acceptance is key and they want to be sure that VRR is really up to the task before deploying it across the network, where high-expectations must be met.

JÉRÉMIE BAYLE

Jérémie has been an ATCO at Paris CDG since 2008 and is in charge of STARSim, the enhancement of the simulation network at DSNA since 2021.

The STARSim simulator in Bordeaux displaying a high-view over the airport

ABOVE: Virtual reality goggles in use to extend the simulator in Toussus