SKYSOFT

SKYSOFT SERVICIOS S.A.

CONTROL TOWER AND RADAR SIMULATOR

SKS-SIM

INTRODUCTION

Operational and training requirements have led **Skysoft Servicios S.A.** to provide a new product that promises to significantly enhance the way in which Air Traffic Personnel train, bringing realism to the training: the FLIGHT TOWER AND RADAR EXERCISE SYSTEM which due to its low cost will be extremely useful for any aeronautical administration, maintaining all the capabilities and benefits of a state-of-the-art simulator.

Skysoft Servicios S.A. offers to provide this completely proven Control Tower and Radar Exercise System as a "turnkey" solution. Developed under ISO 9001: 2015 quality standards.

THE PROBLEM

Aviation continues to expand globally, new airfields open over time, air traffic increases significantly, and operations become more complex day by day. Restrictions of different kinds appear in the system, one of them is the training of the cadres that handle the operations. A qualitative leap in training is necessary for modern challenges. For this Skysoft Servicios S.A. has developed a radar and tower simulator for the training of tower personnel and radar operators, in a realistic environment, with varied scenarios and diverse situations.

THE SOLUTION

The Flight Tower and Radar Exercise System is conceived and developed for the training of Air Traffic Controllers, from beginners to experienced controllers, as well as to allow the design and testing of new operating procedures that **need to be technically validated.**

The System is versatile, it has simple aircraft control from the pilot positions, as well as an agile generation of flight plans and predefined trajectories, and it also offers all the visual aids that the radar consoles use in the Air Traffic Control Centers.

The offered System makes use of control terminal hardware, servers, connectivity devices and others, based on COTS (Commercial Off the Shelf) products.

The combination of the precision of the Subsystem both in the development of graphics (airways, SID, STAR procedures, geographic maps, SAR and others), as well as in the navigation and trajectories of aircraft, provides a superior technology tool easy to operate and of simple setup.

Likewise, its development is based on the concept of "Scenario" for carrying out training exercises and training; it includes:

- All radio aid reporting points (VOR, DME, ILS).
- Associated graphics (procedures, inbound and outbound routes, RNAV, SID, STAR).
- Aircraft and flight plans used in each exercise, starting location for each and all navigation parameters, SID, RUTA y STAR pre-assigned, for automatic navigation, ETD, ETO, Origen and Destination.
- Programable sectorizing (APP, TMA, RUTA) for each Control Station, initial Centering and Zoom for each of the Radar Control and Pilot workstations.

In addition, you can define the type of exercise and have the operational capacity to use the Control Posts to carry out individual exercises or a group exercise with the Radar Control positions.

The number of workstations in the offered Subsystem will be, as detailed:

- For Control Tower Controller training there will be two (2) Airport Control workstations. One (1) Supervisor position (Application Supervisor), two (2) Pilot positions (Application Pilot). There are also two (2) additional off-line application positions used for the creation of Scenarios and Exercises (Graphic and Administrator Application respectively).
- For the training of the Radar Controller, there will be two (2) positions. There are also, two (2) applications that run off-line and are used to create Scenarios and Exercises. (Graphic and Administrator Application respectively).

The number of positions in the Flight Tower and Radar Exercise Subsystems is scalable, with the addition of more training positions being an option.
For the Control Tower and Radar Control training, we suggest that it be carried out by three (3) people as shown below:

1. Control Position trainee.
2. Helper (this could be a second student in charge of communications).
3. Instructor.

The Pilot position could also be covered thus maximizing the number of students for one Instructor in charge of the training.

Infrastructure

With the aim of providing, installing, and working with a Control Tower and Radar Exercise Subsystem, the System will include two (2) Training classrooms as detailed below:

1. **Training Classroom for Flight Tower Controller and pseudo pilot positions.**
2. **Radar Controller Training and Training Classroom.**

The main reason for having two (2) classrooms for the Subsystem, is to optimize the use of the facilities by carrying out individual and simultaneous training exercises for the Flight Tower Controller and Radar Controller, in a comfortable and modern environment with the possibility to cover a wide range of instructional settings
SKYSOFT can assure the correct technical adequacy of the assigned locations, ensuring that it is a suitable environment with the correct electrical infrastructure, network connectivity, comfortable environment, and other auxiliary services that may be necessary as requested by the customer.

Once the system is installed, the Control Tower and Radar Control Exercise Systems will be able to operate at 100% of its capacity twenty four (24) hours a day seven (7) days a week, with all systems if full functionality and a technical team overseeing the correct operation of these systems at all times.

Meteorology

There are functions for changing the weather, necessary in this type of Training, since this is where the trainee will face the complex operations that need to be carried out in the event of low visibility, thunderstorm, strong winds, and other circumstances, being able to modify any of these meteorological conditions, with wide variability in the intensities of fog, rain, or clouds, among others.

Visualization

The view from the Control Tower is achieved by using 60” or larger high resolution displays, with five (5) screens you achieve a 180º dynamic view, you can see the full 360º by rotating the angle of vision.
The use of 3D graphics together with the wide-angle view, enable a realistic view, that is replicated from the real Control Tower View. This scenery design flexibility means that any scene required by the customer can be simulated, enabling multiple scenario views to be prepared and used.

Non-Functional Features

This offer includes yearly software maintenance for all products.

A highly skilled team of technical support engineers is available, for support, during the warranty period.

Due to continued development carried out by SKYSOFT as well as technology evolution and market growth enable periodic upgrades and improvements to all products.

The complete reach of the services offered includes priority access to our technical support personnel, software upgrades as soon as they are available, with new features, improvements, and bug fixes, not included in the initial system purchase.

The important attributes of the service offered are:

- Software Quality Assurance.
- Configuration Management.
- Traceability of fault solutions.
- Models adopted.
- Auditability.

ADVANTAGES

Regarding its characteristics, the SKYSOFT system has several comparative advantages.

Unlike other simulators that do not have radar visualization in the pilot positions or others that have similar screens to the control one. The proposed System offers everything in a single window, streamlining the administration of flights and greatly reducing errors in the interpretation and data entry that modify the flight, which has been demonstrated by the comments of the operators / instructors already using this system.

We can also mention that the recording and reproduction can be done during the entire Exercise duration. The system can be used continuously, with no time limitation on the length of the Exercises.

And it is not least to highlight that given its modular configuration, the system is flexible enough to be able to grow in terms of hardware and software according to new requirements and / or features and will allow updates that extend its lifespan.

It is worth noting that **Skysoft Servicios S.A.** is a flexible company that is focused on satisfying customer needs, this means that it is able to adapt the product to special customer requests, this means that the tool on offer is able to satisfy more fully all customer needs. Such a personalized service would have a prohibitive cost with products from other companies, whilst SKYSOFT is able to include this with the provision of all its products.

SKS-SIM is a very competitive product, not only on a technological level, but also on an economic level, it is able to satisfy the required technical specification for superior training at a cost that is a fraction of that of other systems in the market. At the same time this very accessible technology will have permanent support from our company, SKYSOFT commits to make sure their products have a long life expectancy to be a long-lasting benefit for our customers.

That is why SKYSOFT will prepare and present a recommended Test Protocol, which will guarantee the verification of the correct operation of all parts, modules and subsystems that make up the System offered.
In turn, **Skysoft Servicios S.A.** will provide courses for the management of the system, training the personnel who will later operate the system.
In addition, SKYSOFT will issue a Warranty, in which it agrees to repair or replace, at its discretion, any part of the system hardware or the System Software during the warranty period, for all those failures covered by the warranty. SKYSOFT offers a Comprehensive Technical Support Plan to improve and complement the coverage of the basic warranty.
Finally, we would like to highlight as an additional benefit, the rapid deployment with which SKYSOFT can provide this turnkey system. The complete Control Tower and Radar Exercise System can be delivered and set to work, as described, by SKYSOFT in four (4) months.

CONCLUSIONS

Skysoft Servicios S.A. presents a technological solution that allows a qualitative leap to be made in the training of Control Tower and Radar personnel. This simulator exposes the training personnel to the most diverse exercises and situations that will enable them to solve real-life situations in the future.
The product developed by **Skysoft Servicios S.A.,** has numerous advantages at the operational level, but at the same time it is sufficiently flexibility to adapt to the specific needs of the client, this is a unique feature not offered by other systems in the market. This, together with its modular nature, scalability, rapid deployment, and low acquisition cost, makes it an ideal solution for organizations that want to expand their capabilities efficiently and within budget
Skysoft Servicios S.A. is certified ISO 9001:2015 for all its developments. Our commitment to technological and operational excellence is next to none.