



General Description

PSPK-102 Flight Simulator with a moving cockpit is assigned to:

- simulate the basic flight modes of low-maneuverable aircraft (take-off, landing and cruise flight regimes) under atmospheric forcing or technical failures;
- perfect the A/C ergonomic properties (control levers, types of indication);
- assess the handling qualities of A/C with remote control system when using the tangible control levers (control stick, pedals, engine control lever and so on);
- select the automated-to-manual pilotage expedient balance;
- select the remote control system structure;
- perfect the pilotage technique under nominal and extraordinary flight modes;
- support the flight tests;
- support the certification procedures.

Capabilities

Cockpit:

Two pilot seats equipped with the standard data indication displays (2+1+2 LCD) and a central engines and high-lift devices control station.

Control levers:

Two control columns with electro-mechanical loading system and control side sticks.

Imaging system:

3-channel, 4-window collimation system with digital image synthesis of the Earth and the runway surfaces.

Cockpit motor system:

Provides 6 degrees of freedom, is based on struts, the maximum displacement is:

1. in vertical plane: ± 1.2 m in lengthwise direction and ± 1.5 m in crosswise direction;
2. the roll angle of $\pm 30^\circ$, the pitch angle of $\pm 40^\circ$ and the course of $\pm 60^\circ$.

Digital computer system is composed of:

1. LCU control that is a computer of flight dynamics model.
2. Auxiliary computer for modeling the airborne systems and atmospheric disturbances.



3. Three computers of ambient conditions imaging system.
4. Five computers for synthesis of multi-functional displays frames.
5. Two computers for control levers loading system.
6. Equipment interface unit (32 channels of ADC, 64 channels for discrete inputs and 64 channels for discrete outputs).

Research engineer operation station:

1. Computer station control panel (a KVM Switch, a display, a key-board, a mouse).
2. Visualization replicator monitor.
3. Multi-functional replicator monitor.
4. Interphone system.



Application

The facility is used for investigating the manual flight regimes control, the flight dynamics and the low-maneuverable AC control system, including the research supporting their design and certification

stages as well as for specific researches of the airframe elasticity and load factor impact on aircraft control, the means and technologies for enhancing the flight safety.