Overview
Stewart platforms have applications in flight simulators, machine tool technology, crane technology, underwater research, air-to-sea rescue, mechanical bulls, satellite dish positioning, telescopes and orthopedic surgery. The laboratory stand is based on National Instruments' hardware and software. It is a MIMO control system which is designed to be used in research and educational purposes. The stand is based on NI CompactRIO programmable platform which is meant for data acquisition, processing and system control.

Features
- 6-DOF parallel manipulator
- MIMO system
- Highly nonlinear system
- Fully compatible with LabVIEW
- Easy to set up
- Ability to simulate various situations
- User-friendly graphical interface

Hardware and Software
- NI cRIO-9063 667 MHz Dual-Core Controller and Artix-7 FPGA
- NI 9403 5 V/TTL, Bidirectional Digital I/O, 32 Ch Module
- LabVIEW Real-Time Module
- LabVIEW FPGA Module
- Windows 7 and later

Applications
- Education stand
- Robotics
- Mechatronics
- Mechanics
- Training for pilots and sailors
- Flight and vehicle simulator
- High-precision machining centers

List of Labs
- MIMO control
- Fuzzy logic control
- Neural network identification and control
- HAPTICS
- Stabilization
- Position control
- Trajectory tracking
- Pulse-width modulation (PWM) with servo motors
- Read data from inertial measurement unit (IMU)
- Kinematics
- Dynamics
- Kinetic and potential energies