

# Tilt-/Gyro Calibration System

## Technical Specification

System for calibration of tilt sensors (like IES1402) and angular rate sensors (like IES3101, IES3103, IES3106), consisting of

- mechanical setup to produce defined angles and angle velocities
- electronic control and measuring device
- PC with software and user interface

### Requirements for mechanical setup

combined usage for tilt and gyro calibrations  
positioning accuracy better than 0.02 degrees  
mount table at least for IES1402, IES3101, IES3103 sensors  
sensors must be mountable with all three axes oriented to rotation axis of cal device  
angular rates from 200 °/s up to 3600 °/s  
big reaction mass to allow placement on standard table in cal lab

### Requirements for electronic control

measuring angles with accuracy better than 0.01 degree  
measuring three axes of analog sensor signals  
bi-directional angular rates within one cal run  
avoidance of commutator rings for sensor signals to obtain best signal quality  
supply voltage for analog sensors, accuracy 0.5 %  
all measures traceable to national standards  
interface for digital tilt sensors  
optional interface for DTI-sensors  
set of interconnection cables and adaptors compatible with FAW equipment  
ethernet or USB interface to control PC

### Requirements for software

comprehensive user guide through all calibration steps  
user programmable list of tilt angle positions  
user programmable list of angular rate sections  
control of external DTI recorder  
output of plain text result files  
result files can be imported into user documents like open office or microsoft word