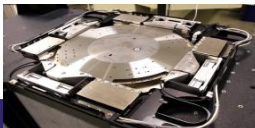
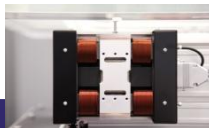


Contract Research & Development For High-End Mechatronics

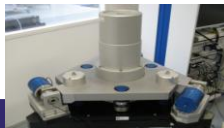
Ir. Jan van Eekelen
Stages



**Zero-stiffness Actuator,
high forces**



Vibration Isolation



Competencies

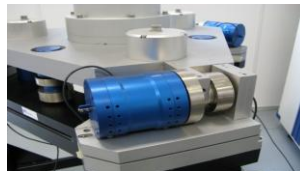
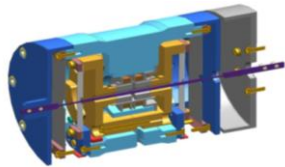
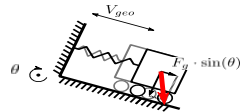
System Design & Integration

- Precision Engineering
- Machine Dynamics & Advance control
 - Over-Actuation/Sensing of flexible structures
- Predictive modelling / Error budgeting
- Vacuum design
- Thermal behaviour (Thermal mode shape analysis)
- Metrology & Calibration



Active Vibration Isolation

- 0.3 Hz Velocity Sensor
- No tilt horizontal coupling
- 50x reduction
- Sub nm level



3

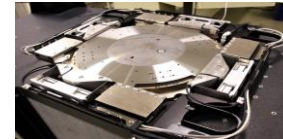
Ronald Schneider, 03-05-2012

Project Examples

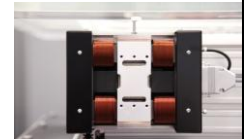
See www.MI-Partners.nl



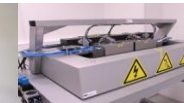
Over-Actuation
Adding control stiffness



XYRz Stage
50 nm accuracy
Novel measuring concept



Zero stiffness actuator,
high force



4

Ronald Schneider, 03-05-2012

Thank you for your attention

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