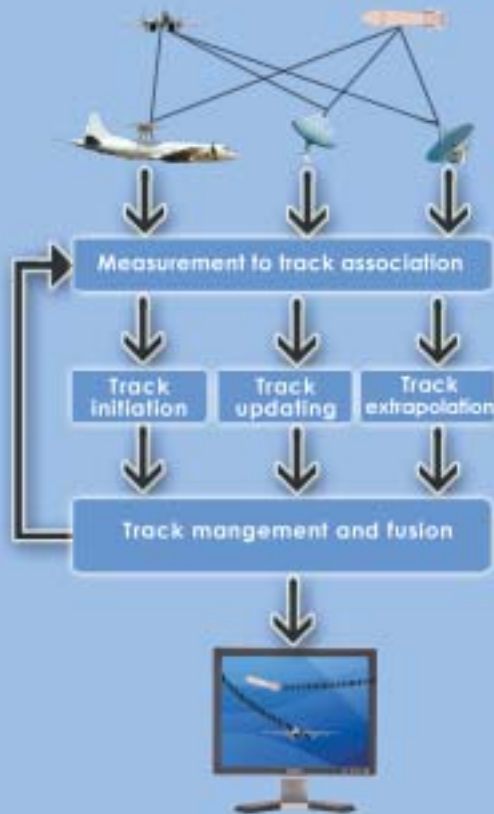


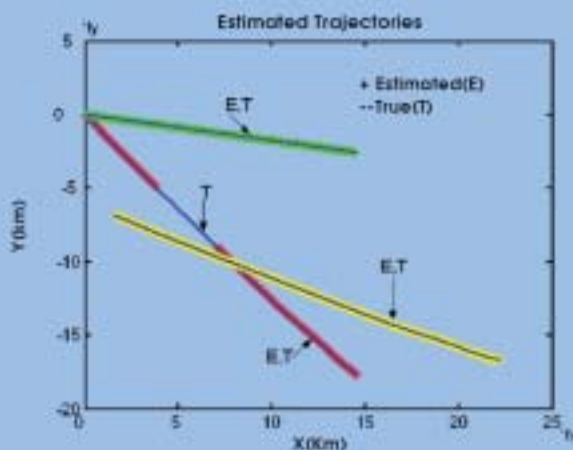
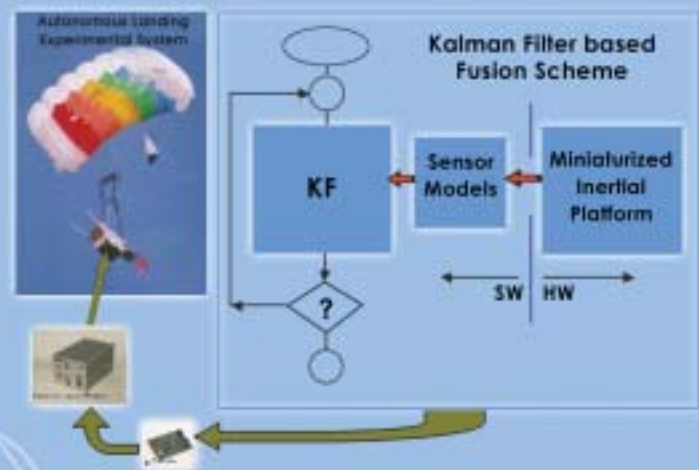
Multi Sensor Data Fusion

MSDF aims to extract maximum information/inferences from multiple sensors/sources and reduce uncertainty in complex situations.
(A decade of R&D, Technology)



- Multi sensor multi target tracking and fusion
- Battery of integrated user interactive software FUSEDAT, MULTIDAT, IMDAT, BEARDAT, VARDAT, DTMSDF, MSMTDAT
- Detection and tracking maneuvering target
- Decentralized square root information filter/ fusion
- Seeker filter/adaptive, modified Kalman filters
- Decision fusion using fuzzy logic

- Range safety applications - RTFLEX (ITR, ISI, NAL)
- Low cost INS for autonomous landing system (ALEX with DLR, Germany)



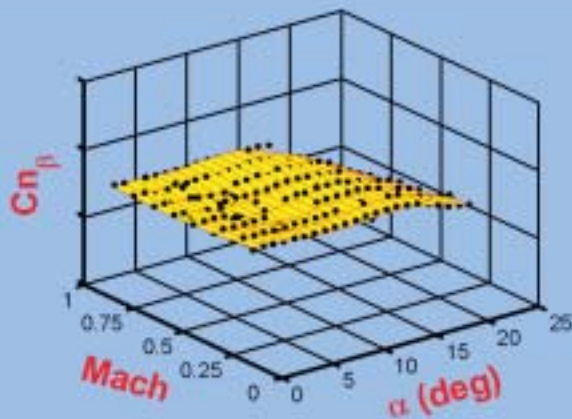
- Image tracking and fusion
- Situation assessment/ AI methods (HUGIN C++)
- Sensor fusion in structural health monitoring
- Cockpit data fusion
- Underwater tracking and fusion



Modelling and Identification

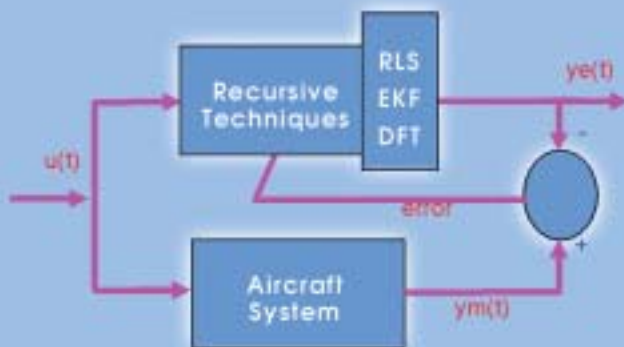
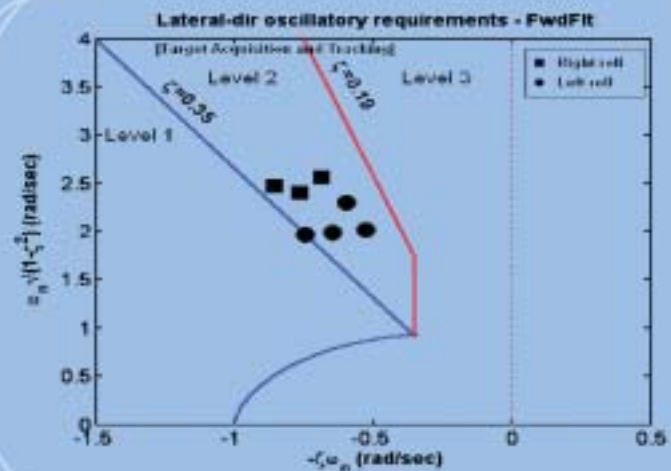
To develop parameter estimation techniques and determine aerodynamic derivatives from flight data of aerospace vehicles. HQ/PIO investigations. (Thirty years of R&D. Technology)

- State-of-the-art estimation software tools: PESTIM, FEM, MODEST, ESTIMA, CIFER (Characterized Jaguar, MiG21Bis, Ajeet, HS748, Kiran, LCA, ALH, Chetak, LCRA, HANSA, SARAS)
- Flight path reconstruction (EKF) and parameter estimation (with DLR, Germany), flight data analysis
- Identification of nonlinear, unstable systems, ANN based approaches



- Global model identification
- Multivariate orthogonal functions
- Splines

- Handling qualities evaluation software
- MATLAB/GUI interactive HQpack for aircraft and helipack (with DLR, Germany) for rotorcraft



- On-line parameter estimation
- Post failure analysis/ AI methods
- Direct aero-data base update
- Aero-elastic modeling/high AOA modeling/ UAV-MAV parameter estimation
- Frequency-domain ID