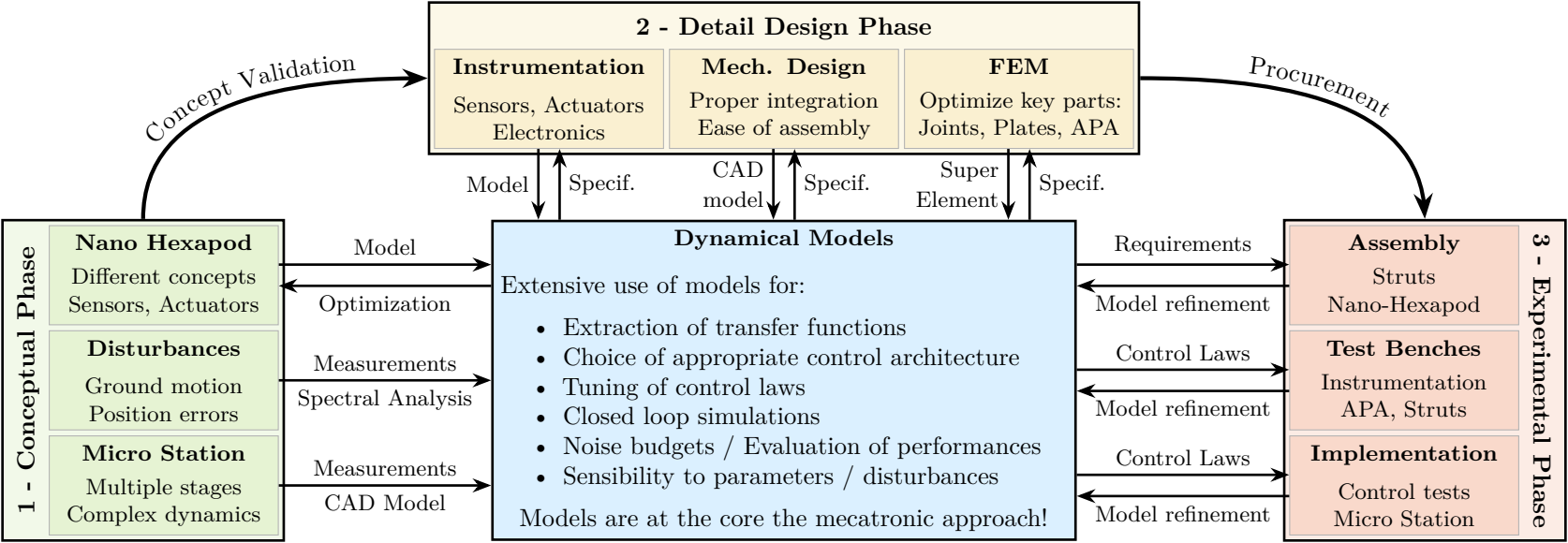
2 - Detail Design Phase
Instrumentation
Sensors, Actuators
Electronics
Mech. Design
Proper integration
Ease of assembly
FEM
Optimize key parts:
Joints, Plates, APA
Concept Validation
Procurement
Model
Specif.
CAD model
Specif.
Super Element
Specif.
1 - Conceptual Phase
Nano Hexapod
Different concepts
Sensors, Actuators
Disturbances
Ground motion
Position errors
Micro Station
Multiple stages
Complex dynamics
Model
Optimization
Measurements
Spectral Analysis
Measurements
CAD Model
Dynamical Models
Extensive use of models for:
• Extraction of transfer functions
• Choice of appropriate control architecture
• Tuning of control laws
• Closed loop simulations
• Noise budgets / Evaluation of performances
• Sensibility to parameters / disturbances
Models are at the core the mecatronic approach!
Requirements
Model refinement
Control Laws
Model refinement
Control Laws
Model refinement
Assembly
Struts
Nano-Hexapod
Test Benches
Instrumentation
APA, Struts
Implementation
Control tests
Micro Station
3 - Experimental Phase