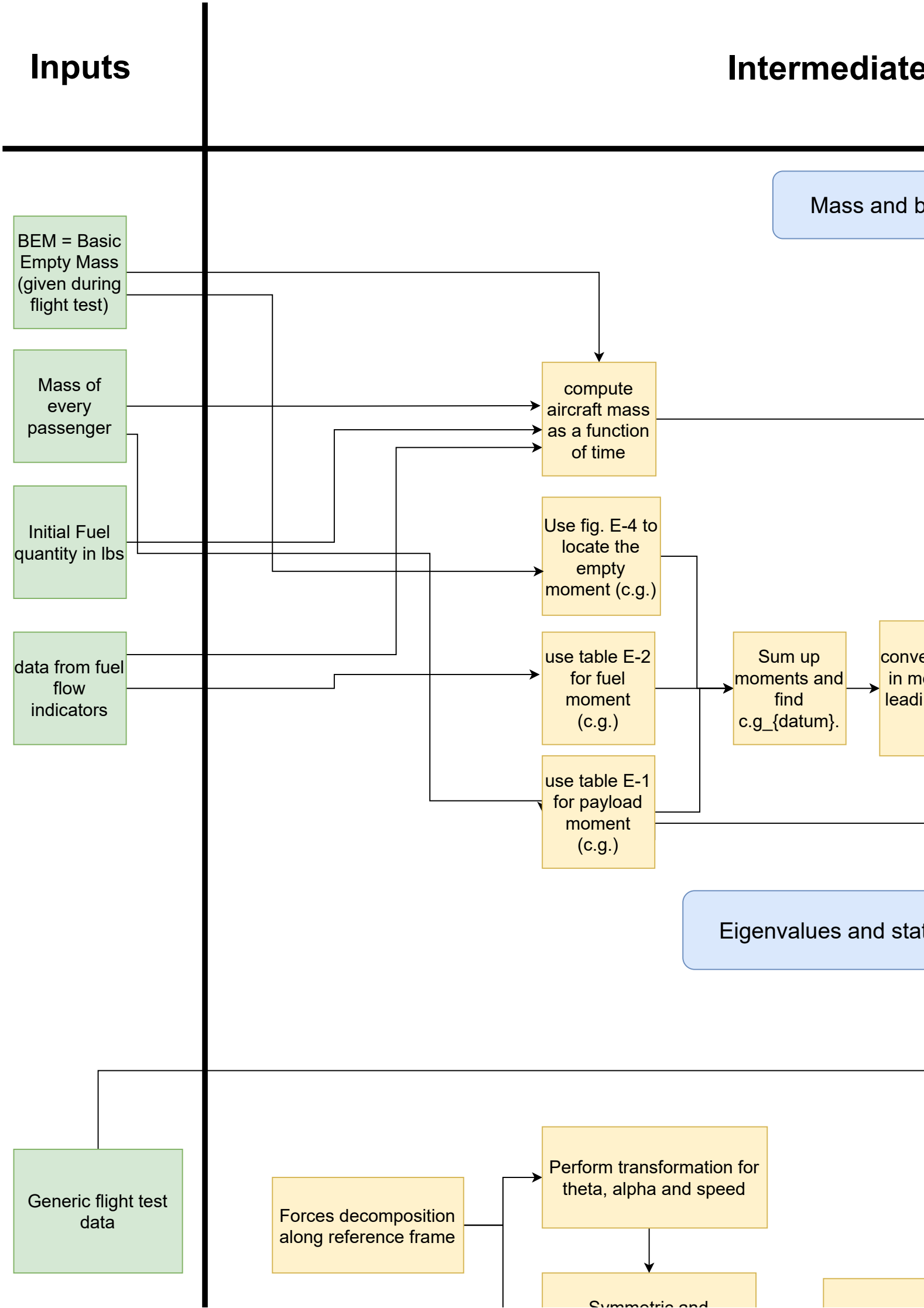
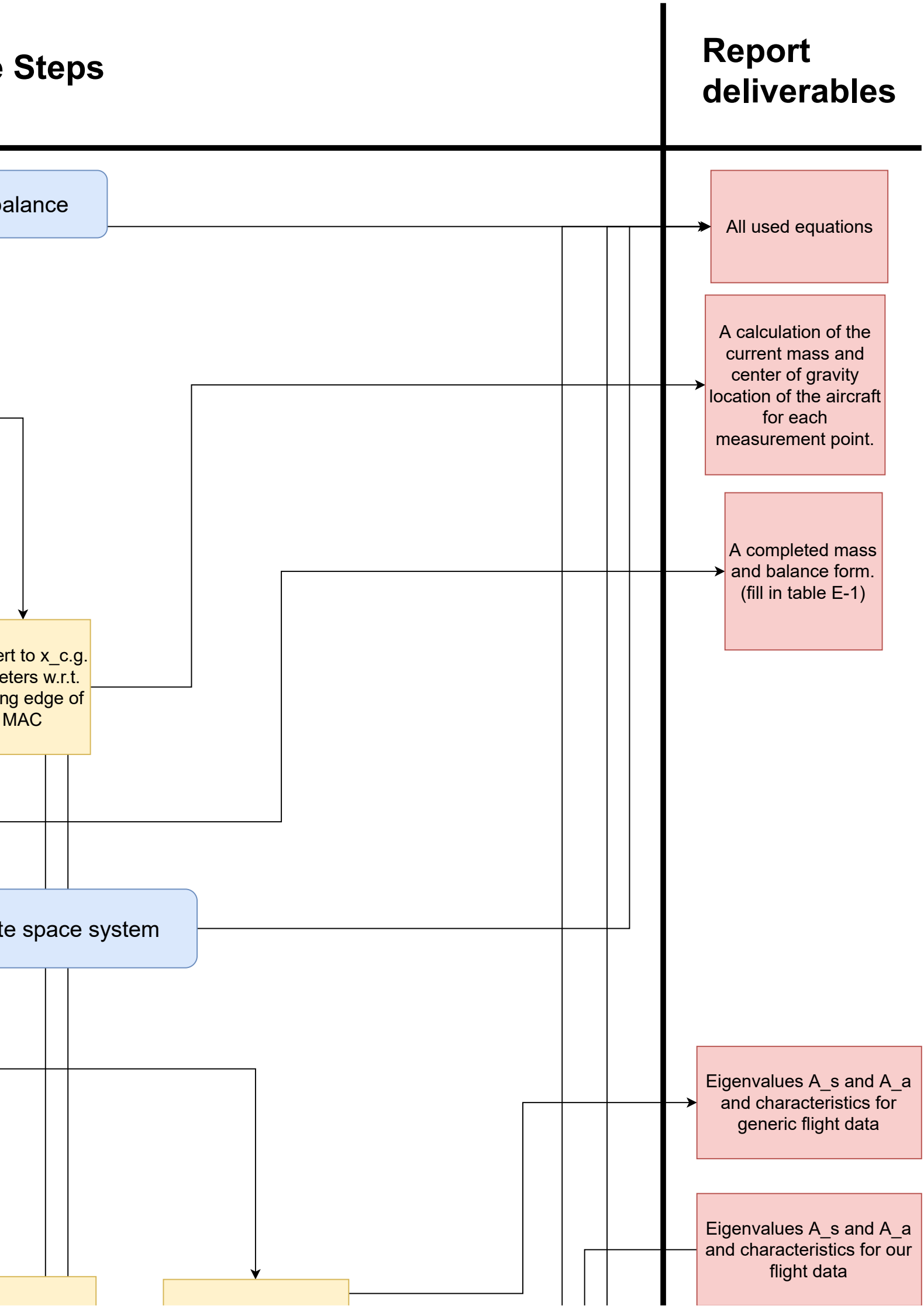
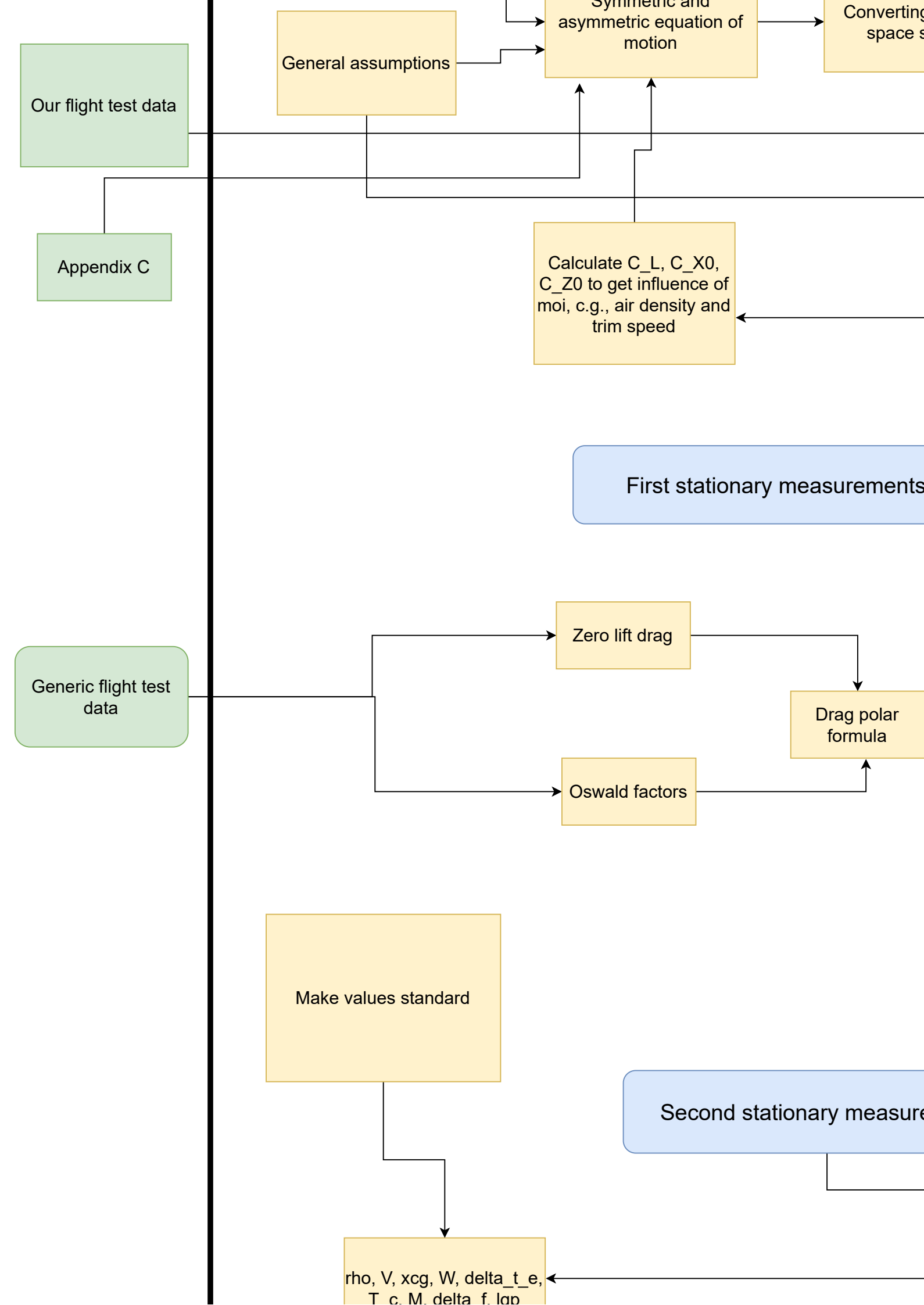
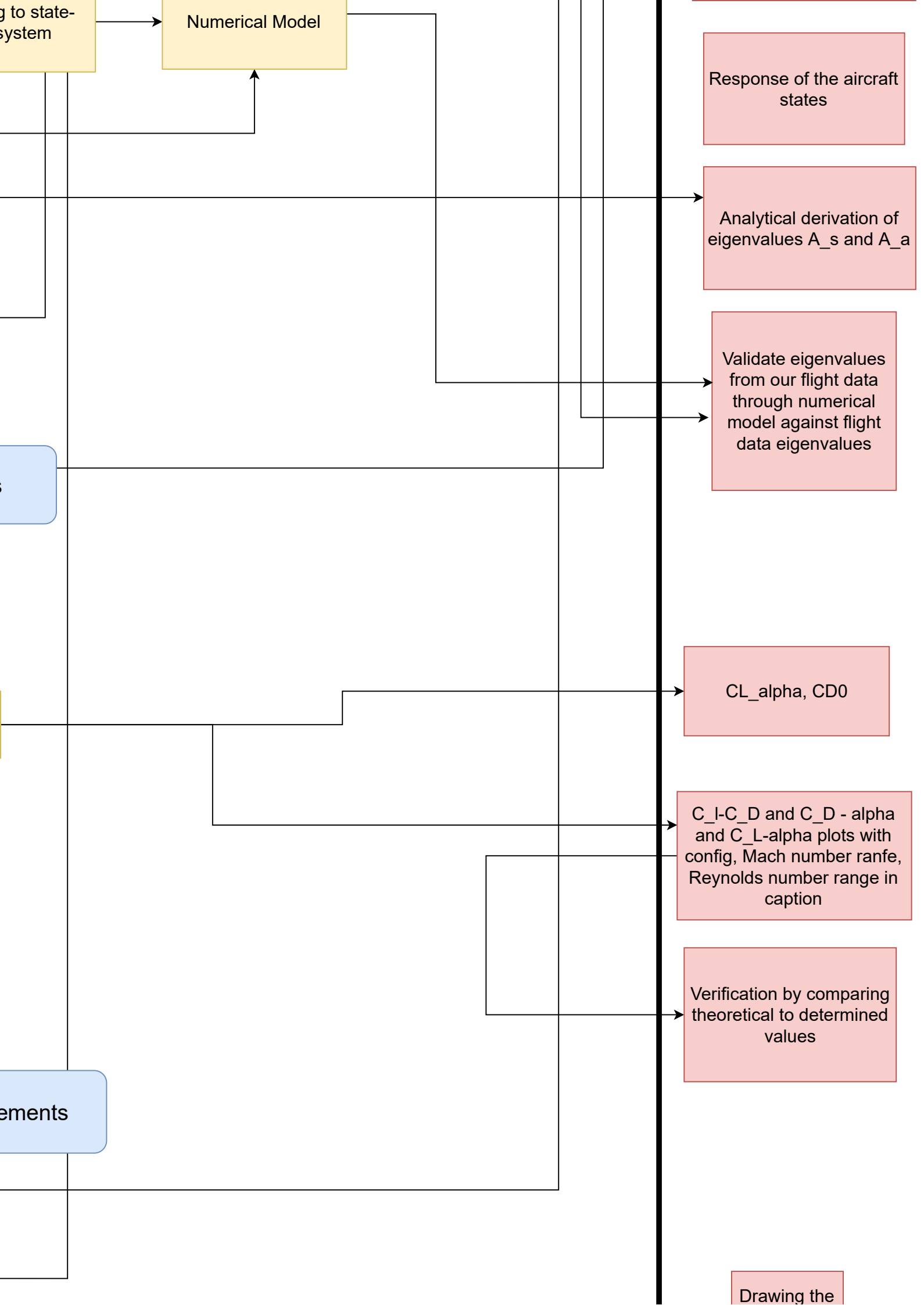
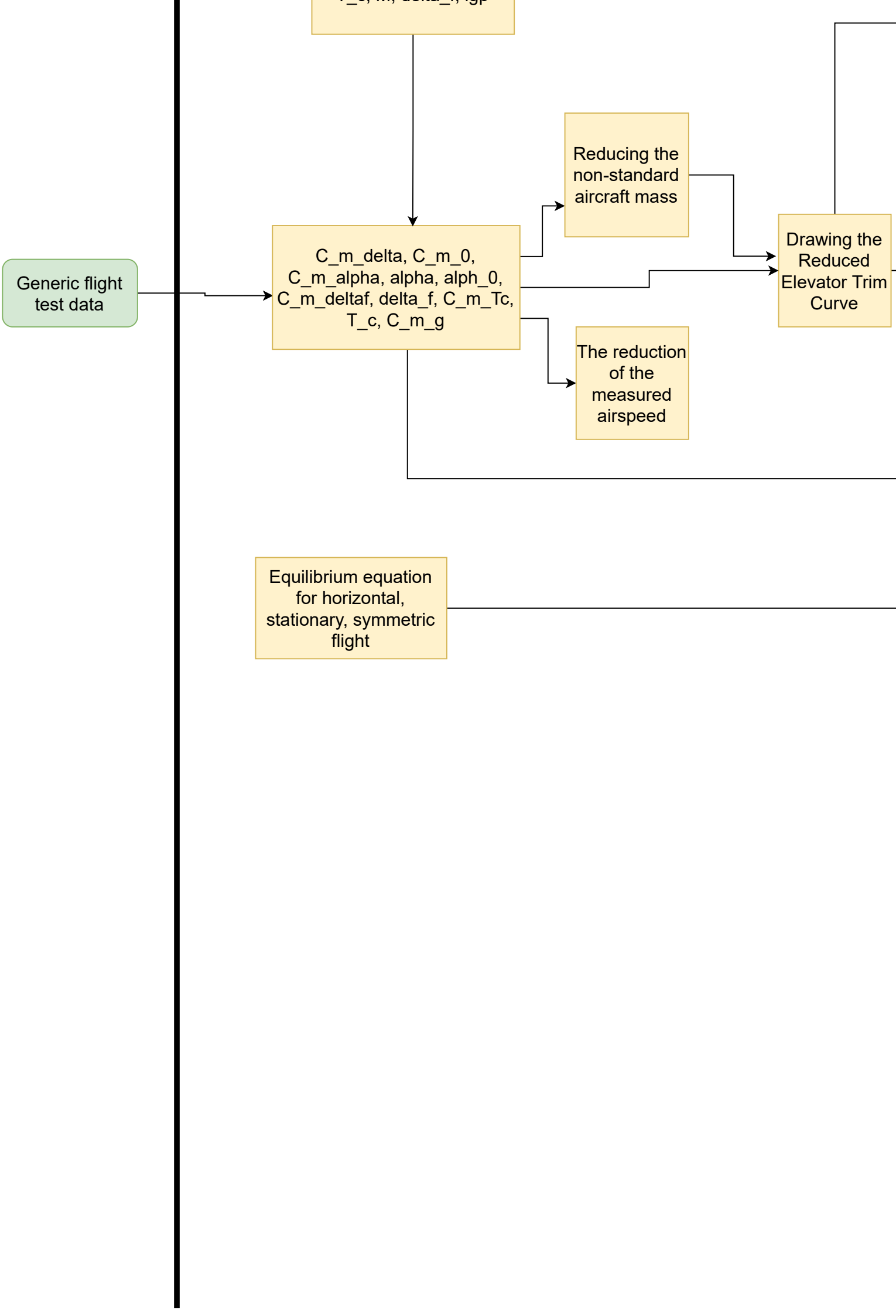
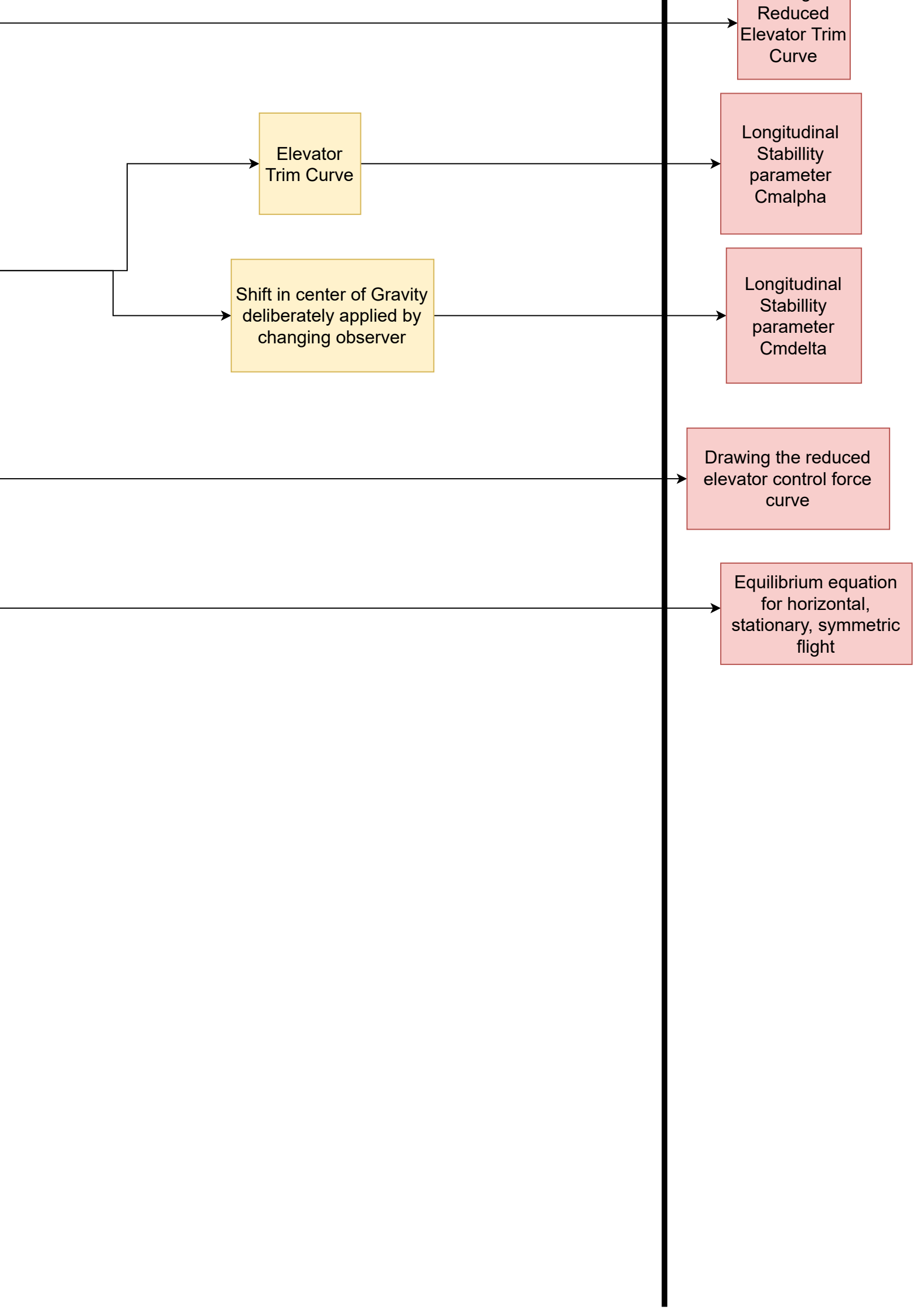

Inputs
Intermediate
Mass and b
BEM = Basic Empty Mass (given during flight test)
Mass of every passenger
Initial Fuel quantity in lbs
data from fuel flow indicators
compute aircraft mass as a function of time
Use fig. E-4 to locate the empty moment (c.g.)
use table E-2 for fuel moment (c.g.)
use table E-1 for payload moment (c.g.)
Sum up moments and find c.g_{datum}.
conve
in m
leadi
Eigenvalues and stat
Generic flight test data
Forces decomposition along reference frame
Perform transformation for theta, alpha and speed


e Steps
Report deliverables
balance
All used equations
A calculation of the current mass and center of gravity location of the aircraft for each measurement point.
A completed mass and balance form. (fill in table E-1)
ert to x_c.g. eters w.r.t. ng edge of MAC
te space system
Eigenvalues A_s and A_a and characteristics for generic flight data
Eigenvalues A_s and A_a and characteristics for our flight data


Symmetric and asymmetric equation of motion
Converting space s
General assumptions
Our flight test data
Appendix C
Calculate C_L, C_X0, C_Z0 to get influence of moi, c.g., air density and trim speed
First stationary measurements
Zero lift drag
Generic flight test data
Drag polar formula
Oswald factors
Make values standard
Second stationary measure
rho, V, xcg, W, delta_t_e, T_c, M, delta_f, lgp


g to state-
system
Numerical Model
Response of the aircraft states
Analytical derivation of eigenvalues A_s and A_a
Validate eigenvalues from our flight data through numerical model against flight data eigenvalues
CL_alpha, CD0
C_l-C_D and C_D - alpha and C_L-alpha plots with config, Mach number ranfe, Reynolds number range in caption
Verification by comparing theoretical to determined values
ements
Drawing the


Generic flight test data
C_m_delta, C_m_0, C_m_alpha, alpha, alph_0, C_m_deltaf, delta_f, C_m_Tc, T_c, C_m_g
Reducing the non-standard aircraft mass
The reduction of the measured airspeed
Drawing the Reduced Elevator Trim Curve
Equilibrium equation for horizontal, stationary, symmetric flight


Reduced Elevator Trim Curve
Elevator Trim Curve
Longitudinal Stabillity parameter Cmalpha
Shift in center of Gravity deliberately applied by changing observer
Longitudinal Stabillity parameter Cmdelta
Drawing the reduced elevator control force curve
Equilibrium equation for horizontal, stationary, symmetric flight