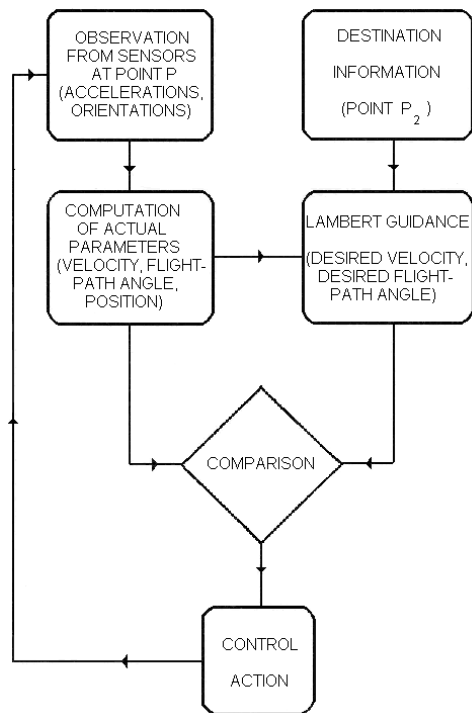


## Air-Spacecraft of the Third Millennium

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**Fig. 1. Flow chart of the Lambert scheme**

should be computed by a combination of the multi-stage Lambert scheme (incorporating cross-range error) and the multi-stage-Q system. Corrections to be achieved by applying control laws — the extended-cross-product steering and the ellipse-orientation steering. Final check, ascertaining that the corrections had been achieved, was made possible by employing the dot-product steering. For cargo transport, this seemed to be an ideal solution. Even before the necessary database is established for human travel, ASTM could be used to transport checked baggage of passengers (earlier than their own arrival at destination), leaving more space in conventional aircrafts for passengers, thus reducing fuel-per-passenger ratio. The real challenge, on the other hand, lay in modeling the effects of enhanced and reduced gravity on physiological systems, *e. g.*, functions of brain, heart and spinal column as well as flow of blood, *etc.*, in particular, for the pediatric and the geriatric populations. Some theoretical estimates had, already, been made. During reduced gravity, there would be increased blood flow to upper torso and brain. Moiré fringe topography and rasterstereography could be used to study and model changes in shapes and curvatures of upper torso during altered-gravity situations. In conclusion, ASTM had the potential to take over the travel market, after it passed through the designing and the development phase. The processes involved in the proposed product are *efficient* (economical, time saving) as well as *effective* (safe, environmentally friendly).

**Keywords:** Green engineering, multi-stage-Lambert scheme, multi-stage-Q system, cross-product steering, dot-product steering, ellipse-orientation steering, elliptic-astrodynamical-coördinate system

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