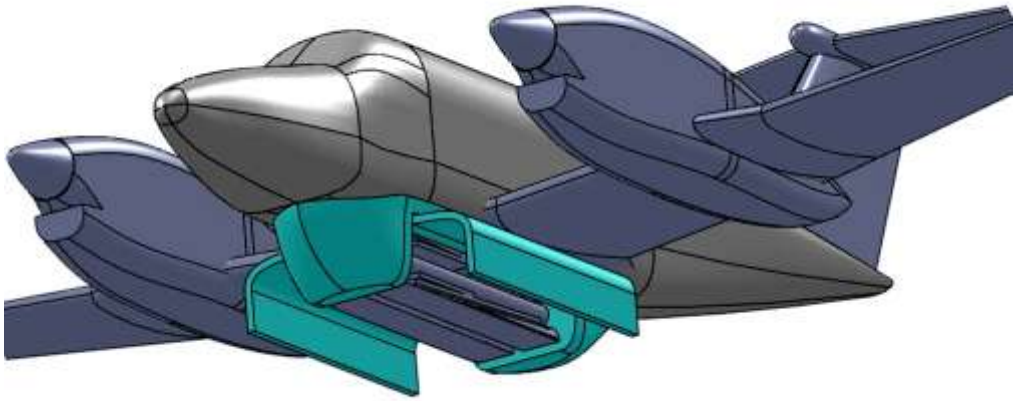
SP-eYe project:
(Special Purpose Eye)
UAV launched from the surveillance aircraft KingAir B200



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SP-eYe is an airborne system which increases the surveillance range of an existing IDF aircraft B-200 KingAir ("Tzofit").

The main operational concept:

Two folded UAVs mounted inside the gondola beneath the fuselage of the mother-plane. UAVs are launched from 'gondola', unfold in the air and execute the surveillance mission. The UAVs are operated by an airborne station on the mother plane that receives real time video and data from the UAVs (LOS communication).

After the mission UAVs leave the observation area and destroy themselves.

MONGuard was chosen as UAV for our mission, among several others. MONGuard is a student project at the Technion from previous years. The UAV was adopted for our mission requirements without changing original control avionics systems.

During the project, the following were accomplished:

- ✓ Market survey and preliminary design.
- ✓ Configuration selection and detailed design of the following:
  - 'Gondola' doors opening mechanism
  - 'Gondola' structure design
  - 'MONGuard' internal layout & weight distribution
  - Mother-plane internal layout & UAV control station sizing
  - Wind tunnel model design and manufacturing
  - Wind tunnel tests
- ✓ Detailed analysis:
  - Aerodynamics of 'gondola'
  - 'Gondola' load and stress
- ✓ Main requirements vs. achievements:
  - Enlarging the operation range – possible within 100 NM
  - Beyond LOS communication – possible within Airborne Control Station
  - 'Gondola' capability for carrying two UAVs & equipment for each mission
  - EO Sensor of 1.2 kg - The 'MicroPop' EO sensor fulfills the requirement