Following its long tradition and high level of expertise in civil and military aircraft, Dassault developed a range of state of the art systems allowing you to fly your Falcon with increased pilot situational awareness, operational benefits and improved safety. Among them, the Head up Guidance System® and Enhanced Vision System are offered across the Falcon models.
Head up Guidance System®

The HGS® allows you to fly your aircraft looking outside while having always in view the critical flight parameters.

Operational benefits

- As the pilot flies while looking outside, it enhances situational awareness and therefore safety in all situations
- Taxiing
- Take-off
- Approach & Landing
  - Significantly improves the transition from IMC to VMC
  - In particular, it enables to increase the aircraft trajectories accuracy even in poor weather conditions and to increase precision touchdown performance
- Improves operational flexibility, by allowing to land in poor weather conditions, down to CAT IIIA minima (F900LX and F2000LX)

Features

- Collimated symbology
- Automated brightness management, depending on ambient brightness
- F2000LX / F2000S / F900LX specifics
  - Field of view: 30° x 28°
  - CRT overhead unit (Cathodic Ray Tube)
- F7X specifics
  - Field of view: 36° x 30°
  - Advanced Matrix LCD (Liquid Crystal Display) display teamed with LED backlight overhead unit

Additional benefits for CAT III approval (F900LX and F2000LX only)

- Benefits:
  - Lower minima (CAT IIA) + Special Authorisation SA CAT I and SA CAT II (operational approval required)
  - HUD guidance on all ILS approaches
  - Includes flare guidance cue
- Requirements:
  - 2nd Radio Altimeter
  - Operator approval and crew qualification

Certification status for HGS®

- F7X HGS® certification
  - All types of operations approved on the base aircraft
- F900LX HGS® certification
  - All types of operations approved on the base aircraft
- Manual CAT III approaches (HUD3)
- F2000LX HGS® certification
  - All types of operations approved on the base aircraft
- Manual CAT III approaches (HUD3)
- F2000S HGS® certification
  - All types of operations approved on the base aircraft

Approach / Landing

At the decision altitude (DA), depending if visual references can be seen, the pilot decides to continue the approach, or otherwise to go-around.
Enhanced Vision System

Offered on all Falcon models, the Enhanced Vision System is a perfect complementary system to the HGS® to reach a new step in term of operational benefits, safety of flight and crew situational awareness. When EVS option is chosen, the EVS infrared image will be superimposed on HGS® display.

Infrared images

Increased situational awareness

- Designed to
  - provide an enhanced image of the outside world
  - improve the perception of terrain, obstacles and approach / landing references in various conditions (fog, snow, obscurity…) during approach, take-off, landing and taxiing operations

<table>
<thead>
<tr>
<th>PHASE OF FLIGHT</th>
<th>INTENDED FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramp / Taxi</td>
<td>Improve the perception of the forward environment, especially ground markings, lightings, obstacles, vehicles and other aircraft.</td>
</tr>
<tr>
<td>Take-off</td>
<td>Improve the perception of runway axis and possible runway incursions.</td>
</tr>
<tr>
<td>Climb / Descent</td>
<td>Improve the perception of surrounding terrain (mountain, coast, airport configuration, etc.) especially in mountainous areas improve the perception of clouds to avoid turbulence and lightning.</td>
</tr>
<tr>
<td>Cruise</td>
<td>Improve the perception of lowering clouds to avoid turbulence and lightning.</td>
</tr>
<tr>
<td>Approach and landing / GO-around</td>
<td>Improve the perception of surrounding environment (terrain, airport configuration …) Improve the acquisition of the landing references and ease the transition from IMC to VMC. Enable to descent below minima (when approved)</td>
</tr>
<tr>
<td>Rollout</td>
<td>Improve the perception of runway axis, exiting taxiways and possible incursions.</td>
</tr>
</tbody>
</table>

Architecture

- The system superimposes infrared pictures from outside environment on HGS® or Head Down Display
- The system is installed on top of the nose cone
- Image displayed in
  - The HGS® combiner
  - Either MDU through the “VIDEO” menu

Area of use / Applications

- Increased situational awareness
- Designed to
  - provide an enhanced image of the outside world
  - improve the perception of terrain, obstacles and approach / landing references in various conditions (fog, snow, obscurity…) during approach, take-off, landing and taxiing operations
**FALCON MAJOR OPTIONS | HGS®/EVS**

**Regulation**
- Regulation basis for landing credits (F7X only)
  - FAA FAR91.175 (l) & (m) (and FAR 135.225 (c) for Part 135 operators)
  - EASA EU OPS 1.430 (a) / Appendix A (New) to EU OPS 1.430 (f)
- Other certification authorities
  - Credits granted on a case by case basis
  - Level of operational credits granted to F7X EVS may differ from FAA / EASA
  - Specific operator approval may be required
  - Specific training requirement may apply

**Certification status for EVS**
- **F7X**
  - EVS certified end of 2010, for:
    - All phases of flight
    - All type of operations (including automatic CAT II monitoring / except steep approaches)
    - Landing credit approval (according to authorities)
- **F2000LX**
  - EVS certified in July 2007, for:
    - All phases of flight
    - All type of operations (except steep approaches and CAT II/III)
- **F900LX**
  - EVS certified in July 2008, for:
    - All phases of flight
    - All type of operations (except steep approaches and CAT II/III)
- **F2000S**
  - EVS planned to be certified at entry into service, for:
    - All phases of flight
    - All type of operations (except steep approaches)

**F7X landing credits**

**Without EVS**
Visual references must be seen. Otherwise: Go around.

**With EVS**
If visual references can be seen using infrared and are consistent with flight information, continue the descent below published minima down to no lower than 100 ft HAT. Otherwise: Go around.

- Without EVS
  - Visual references must be seen. Otherwise: Go around.
- With EVS
  - If visual references can be seen without reliance on EVS, continue for landing. Otherwise: Go around.

Altitude
- 200 ft
- 100 ft
- 0 ft

Without EVS:
Visual references must be seen. Otherwise: Go around.

With EVS:
If visual references can be seen using infrared and are consistent with flight information, continue the descent below published minima down to no lower than 100 ft HAT. Otherwise: Go around.

With EVS:
If visual references can be seen without reliance on EVS, continue for landing. Otherwise: Go around.

**Reference:** DGAC12DCS0160 | Revision: May 2012