

Exhibit D – Orbital Debris Mitigation Statement
FCC Form 312 – Modification Application for EV8
Applicant: Kongsberg Satellite Services AS
Call Sign: E160028

Enclosed below is a statement on orbital debris mitigation from Hisdesat Servicios Estratégicos, S.A. of Madrid, Spain, the owner and operator of the PAZ satellite, which hosts the EV8 payload. This statement is provided with respect to PAZ in an attempt to meet the requirements of 47 C.F.R. §§ 25.137(d); 25.114(d)(14).

To whom it may concern:

EV8 (known as PAZ) is owned and operated by Hisdesat Servicios Estratégicos, S.A. of Madrid, Spain. This statement responds to the requirements of 47 C.F.R. §§ 25.137(d) and 25.114(d)(14). Hisdesat states that the information below is correct.

PAZ Design

The PAZ Satellite is 5 meters in height and 2.4 meters in diameter, cylindrical in shape, and has a launch mass of approximately 1400 kg. The Satellite's prime contractor was Airbus Defence & Space. PAZ has a propulsion system that is used for station-keeping during the mission and will be used for deorbiting at end-of-life. As a result of the low operating orbit for PAZ (514 km), even without the planned deorbiting maneuver from the propulsion system, atmospheric reentry for PAZ will occur within 25 years post-mission in accordance with the Commission's orbital debris mitigation policy.

Release of Debris During Normal Operation and Collision With Small Objects

Hisdesat has assessed and there is not planned any debris during normal deployment and operations, and has assessed and limited the probability of the Satellite hits with small debris or meteoroids that could cause loss of control and prevent post-mission disposal.

The PAZ bus is based in AstroBus platform, which has accumulated many years of design heritage and evidences the spacecraft's resiliency. The spacecraft has redundant systems to reduce the risk that small debris strikes would cause a loss of control. The bus is fully redundant, provided by two independent strings, with each containing a full complement of the systems required to operate the spacecraft. The single, sun-facing solar panel is designed to withstand impacts from small objects.

Explosion Risk Relating to Stored Energy

Hisdesat has assessed and limited the probability of accidental explosions during and after completion of mission operations. Hisdesat has taken measures to prevent debris generation from the conversion of energy sources on board the spacecraft into energy that fragments the spacecraft. Hisdesat understands that this includes chemical, pressure, and kinetic energy sources. Stored energy will be removed at the spacecraft's end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other means.

Large Object Collision Risk and Maintaining Orbit

Hisdesat has assessed and limited the probability of the space station becoming a source of debris by collisions with large debris or other operational space stations.

PAZ has a hydrazine-based propulsion system for stationkeeping, which is being used to maintain the 514 x 514 km SSO orbit for the duration of the Satellite's mission. The Satellite operator, Hisdesat, actively monitors the spacecraft and uses the propulsion system to maintain the apogee, perigee, inclination, and the right ascension of the ascending node and will continue to do so for the duration of the mission. Hisdesat also monitors for the possibility of collision with other objects and is prepared, when appropriate, to actively maneuver PAZ to avoid collision.

PAZ is positioned in the same orbit as the German TerraSAR-X and TanDEM-X radar satellites, and operates in coordination with those other satellites as a constellation to provide data to Agencies, Institutions and customers worldwide. Hisdesat has coordinated the orbital operations for PAZ with other operators that have spacecraft in nearby orbits.

Precise tracking and orbit determination for PAZ is enabled through use of the spacecraft's laser retro reflector. Positioning during nominal and safe operational modes is determined using star sensors, GPS, and coarse Earth and Sun sensors.

Post-Mission Disposal

PAZ maintains fuel reserves for planned post-mission deorbiting maneuvers equivalent to 25 m/s of Delta-V. Use of this reserve will translate to a perigee altitude change of approximately 40 km (from an initial orbit of 514 x 514 km @ 97.44°). PAZ also has stationkeeping fuel reserves that may be used for deorbiting at the end of mission, if any reserves remain.

The deorbiting plan for PAZ will be to reduce its perigee altitude by 40 km (25 m/s) at the end of its end of life, initially estimated in 7-years mission (2025), exhausting the propellant reserves, and then to let the spacecraft deorbit naturally by virtue of atmospheric drag.

Sincerely



Miguel Angel García Primo