Miguel Serrano Fuentes

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Avionics Systems Engineer · 5+ years in aerospace systems engineering

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EXPERIENCE

Jun 2023 — Present

Avionics Systems Engineer

Pilatus Aircraft (via ISATI Engineering Solutions) · Stans, Switzerland

At the aircraft manufacturer I cover the full V-model for the communication and surveillance suite of the PC-12/47G, from requirements to verified systems: system and interface requirements, coordination with equipment suppliers and cross-discipline teams, verification against the EASA certification basis (including its CS-23 requirements), and closure of the compliance evidence that earns an aircraft its type certificate.

Took the communication and surveillance systems of the PC-12/47G through three certifications so far, including the EASA type certification of 18 December 2024.

[R1] EASA TCDS EASA.A.089 · PC-12/47G (Section E)

Avionics · Systems Engineering · Integration & Test · EASA CS-23 · Type Certification

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Jul 2022 — Jun 2023

IVV&T Engineer

Airbus Defence and Space (via Orbital Critical Systems) · Getafe, Madrid

I worked on the integration, verification, validation and testing (IVV&T) of the Smart Avionics Manager, the mission avionics core of the Airbus A330 MRTT tanker. The software is developed to DO-178C Design Assurance Level C: its failure could contribute to a major failure condition. I tested the integrity of its time and space partitioning, integrated it with the aircraft's V/UHF radios, and ran unit tests and structural code coverage analysis. The team used Scrum, with a backlog driven by certification.

IVV&T · DO-178C DAL-C · HW-SW Integration · Scrum

Aug 2021 — Jul 2022

ATM Systems Engineer

Indra (via Exceltic) · Madrid

I worked in R&D on IRTOS, Indra's Digital Remote Tower System. It lets a controller manage an airport's traffic from a control centre elsewhere, using camera, sensor and radar feeds instead of a direct view from a tower. I wrote and maintained the system requirements and interface specifications (SRS / SRD / ICD) for the programme's different site deployments.

— Owned and delivered, end to end, a SESAR validation of remote tower control from Budapest for three regional Hungarian airports. SESAR is the EU's air traffic management research programme.

— Started the installation of the digital remote tower at Budapest Ferenc Liszt International Airport for HungaroControl, whose control centre is built so that the capital's air traffic can be managed entirely from outside the airport.

— Contributed to the digital remote tower for Red Sea International Airport, Saudi Arabia.

— On the remote tower for Kuwait International Airport, part of a larger Indra programme there, I was one of the systems engineers and designed the layout of the installations.

— Contributed to InNOVA, Indra's Advanced Surface Movement Guidance and Control System (A-SMGCS), delivered to NAV CANADA for five Canadian airports. It helps controllers and pilots move aircraft safely on the ground in low visibility.

[R2] Indra · Budapest digital remote tower (press release)

ATM · SRS / SRD / ICD · A-SMGCS · SESAR

Jan 2021 — Jul 2021

Payload Engineer · Atmospheric Radiation Monitor (Trainee)

INTA · National Institute of Aerospace Technology

I worked on the design and build of an atmospheric radiation monitor flown on a stratospheric balloon, within HEMERA, a balloon-borne research infrastructure under the EU's Horizon 2020 programme (H2020). Its silicon-based detectors were characterised in close collaboration with CERN's radiation test laboratory, whose accelerator beams simulate muons and other high-energy cosmic-ray particles: the radiation the instrument had to withstand and measure at altitude.

[R3] HEMERA · balloon-borne research infrastructure (H2020)

Space Payloads · HEMERA H2020 · CERN · Radiation Testing

Sep 2017 — Feb 2021

Business & Office Manager

Estudio José Luis Pico Maeso · Madrid

I handled the day-to-day administration of an architecture studio, including administrative work on the donation of José Luis Pico Maeso's historic archive (318 archive boxes and 235 tubes spanning 1948 to 2001) to the Official College of Architects of Madrid (COAM). The donation was agreed in 2009 and carried out over the following years.

[R4] COAM · José Luis Pico Maeso archive

Management · Operations

VENTURES

Jun 2026 — Present

Founder · Lodestar GmbH

Swiss limited company (GmbH) registered in Nidwalden, for AI solutions and analysis: bespoke AI systems and agents for companies, and DailyStock, a stock analysis platform I co-own. It also runs an e-commerce business for collectible Japanese trading cards (One Piece).

EDUCATION

2020 — 2021

MSc Space Science & Technology

Universidad de Alcalá

Satellite payloads and service modules, data acquisition and analysis, mission tracking, real-time control software, space weather and AI for autonomous systems.

2014 — 2020

BEng Aerospace Engineering (propulsion)

Universidad Politécnica de Madrid

Propulsion track: design, thermodynamics and certification of aircraft and space engines, plus fluid mechanics, structures and aerospace materials.

SKILLS

Systems Engineering · Avionics · EASA CS-23 · DO-178C · IVV&T · HW-SW Integration · Requirements (SRS / SRD / ICD) · Scrum