

Nicholas Lan

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British • Date of Birth: 7th April 1979

Professional Experience

- Aug 2012 - Present Assistant Systems Engineer: Iris Programme Office, European Space Agency (for HE Space Operations B.V.)**
- Requirements management including use of DOORS from mission level to segment specifications, working closely with aviation stakeholders (including SESAR JU and EUROCONTROL) and ESA experts
 - Identification and implementation of publication activities promoting the programme
 - Review and contribution to work of related stakeholder projects within SESAR Joint Undertaking.
 - Contributing to definition and review of internal activities, both technical and programmatic, and those performed under ESA contract including expert stakeholder consultants.
- Apr 2007-Jul 2012 Systems Engineer: Ursa Minor Space & Navigation B.V., Delft (NL)**
- Galileo Search and Rescue Test Beacon (SAR-TB) development under ESA contract including systems engineering, requirements management test design and execution, documentation and project management.
 - Responsibility within SAR-TB delta development and integration into SAR Verification Test Bench (SARVTB) under contract to CNES.
 - Requirements definition, design and implementation of commercial products and services including a GNSS RF signal simulator
 - Consortium building and proposal coordination for ESA, EC and national funding programmes
 - Interference detection and localisation algorithm design in GALMONET project under Dutch national funding for GNSS RF monitoring grid
 - Led company contribution to ESA study on telecommunications market evolution (ARTES 1 ESA AO/1-5508/07/NL/CLP)
 - Responsibility for company role in at all technical levels of FP6 project MTTs, demonstrating potential integrated application using Galileo capabilities.
 - Software development including Matlab, LabVIEW and Java
- Sep 2011–Jan 2012 Lecturer, Fachhochschule Gelsenkirchen, Bocholt (DE)**
- Design and teaching of undergraduate course, 'Biomimetics & Space Engineering'
 - Subjects covered include Matlab, LaTeX, space systems engineering, biomimetic case studies, biomimetic methodology, technical writing
- Jun 2005–May 2006 Young Graduate Trainee: Advanced Concepts Team (ACT), European Space Agency, Noordwijk (NL)**
- Support of Ariadna programme, for collaboration with academia in small, efficient studies on emerging topics with relevance to space:
 - Involvement in programme management and evolution, including software management, support to administration of individual studies, actions to streamline processes and development of research objectives
 - Critical evaluation of study topics, at all stages from conception to completion, leading to a working understanding of research across the broad range of Ariadna activity
 - Systems level study of various novel concepts in relation to potential Ariadna study and personal research and publications, particularly relating to robotics for exploration
 - Involvement in CDF study (SPAESS) into alternative energy storage technologies in technical support of study manager
 - Contributed to ACT and ESA objectives in areas such as ACT approach to new media including collaboratively authored databases and General Studies Programme external review
- various dates Other Work Experience: Various Companies and Organisations, Several UK locations**
- Campus Representative for graduate recruitment company, WCN. Responsible for autonomously raising company profile and increasing membership on campus.
 - Customer facing –Also includes work as bar and venue staff and shop assistant.
 - Volunteer Consultant, Cranfield Trust. Preliminary project planning for Driving Home, a disabled driven expedition aiming to raise in the region of £1 million
 - Administrative – Includes 3 months at Standard Life Assurance Company

Education

2002-2003 Cranfield University (UK): MSc - Astronautics and Space Engineering

- Courses included: Astrodynamics, Software Engineering, Control Engineering, Space Communications, Launch and Re-entry Aerodynamics, Space Propulsion and Introduction to Space Structures
- Group project title: 'Yes2: The Second Young Engineers Satellite – Mission Analysis and Trajectories' Collaborated with other members of the group in an iterative process of vehicle optimisation to produce a baseline design for this ESA funded project (launch 2007). Provided initial mission analysis and identification of safety issues from deployment to recovery of an inherently safe, inflatable sample return vehicle
- Thesis title: 'Mathematical Analysis of Dust Devils' – Analysis of suitability of mathematical models for representation of dust devils with particular focus on Mars. Code was written in C to fit theoretical model to experimental data and simulations of particle movement in dust devils were implemented in Matlab\Simulink using equations of motion derived from selected force equation

1997-2001 University of Edinburgh (UK): 2(ii) BSc (Hons) – Astrophysics

- Final year project - "Erratic Variability in Quasars". Developed C code to perform statistical analysis of x-ray data from a bright, high redshift galaxy. Tested potential theoretical models for the variation
- Final year team review project - "The origin of the initial stellar mass function"
- Final year modules included: Electromagnetism, Thermodynamics, Atomic and Particle Physics, Astrophysical Cosmology, General Relativity, Stellar Evolution and a practical electronics module.

1991-1997 Belmont Academy, Ayr (UK)

- Sixth Year Studies – 2 passes at grade A in Physics and Chemistry
- Higher Grades – 5 passes at grade A including Maths, Biology, and Chemistry and 1 pass at grade B
- Standard Grades – 7 passes at grade 1 including Maths, Computing and French

2010 London School of Economics, London, (UK)

- Summer School in Environmental Economics and Sustainable Development, grade A-.

Selected Publications

- C. Morlet, N. Lan, and S. la Barbera, "Satellite communication requirements for 4D air traffic management," in Integrated Communications, Navigation and Surveillance Conference (ICNS), 2013, (Herndon, USA), 23-25 Apr 2013.
- N. Lan and C. Menon, *Discrete Event Robots*, ch. Smart bioinspired technologies for the development of a miniaturized legged robotic system, iConcept Press, 2012.
- N. Lan, *et. al.*, A Multi-modal Tracking and Tracing System Integrating Both Existing GNSS Infrastructure and Future Galileo Capabilities, Space Applications Days 2008, Toulouse
- Menon, C.; Lan, N.; Sameoto, D.. "Towards a methodical approach to implement biomimetic paradigms in the design of robotic systems for space applications" Applied Bionics and Biomechanics 6.1 (2009). 19 Jun. 2009

Full list: www.Nicholas-Lan.me.uk/publications.htm

IT and Language Skills

- Software development experience including LabVIEW, Matlab, Java, C, SQL and Maple
- Working knowledge of many software packages including Microsoft Office, DOORS, STK, LaTeX, Dreamweaver and Photoshop
- Hardware skills in computer assembly and some practical electronics experience
- French and Dutch – Basic

Other Interests and Activities

- Professional - Member of the Institute of Physics since 1997, currently an associate member. Attended Netherlands Planetary Society Autumn School in planetary sciences in 2010.
- Travel - Including a sponsored charity rally across 14 countries and 13000km.
- Music and Art - active member of university radio station while attending Edinburgh University. Violinist and self-taught guitarist. Keen photographer
- Other - Member and regular campaigner for the WWF and Amnesty International. PADI qualified Open Water scuba diver. Full clean UK driving license

References available on request