



## Europass Curriculum Vitae



### Personal information

Surname(s) / First name(s) **RADNEF / Sorin Stefan**

Address(es)

Telephone(s)

Fax(es) 0040214340082

E-mail

Nationality ROMANA

Date of birth

Gender male

**Total years of Experience** **39+5**

### Work experience

Current position Researcher for Flight Dynamics and Control at INCAS-Bucharest  
Member in the Scientific Council of INCAS  
Associate lecturer at UPB – Technical mechanics course for electrotechnical engineers  
Associate Lecturer at UPB – Flight dynamics course of space vehicles for the master's degree

Main activities and responsibilities Scientific consultancy for flight dynamics and control  
Seminar of Mechanics and Flight Dynamics for new and senior employees

Name and address of employer National Institute of AeroSpatial Research and Development "Elie Carafoli",  
INCAS, Bucharest, blvd Iuliu Maniu 220, Romania

Dates **2007-2015**

Occupation or position held Scientific Manager  
President of the Scientific Council of INCAS

Main activities and responsibilities Research activities coordination  
Coordination for the development and contracting of research projects  
Current administrative activities

Name and address of employer National Institute of AeroSpatial Research and Development "Elie Carafoli",  
INCAS, Bucharest, blvd Iuliu Maniu 220, Romania

Type of business or sector	Research and Development department
Dates	<b>1995 -2007</b>
Occupation or position held	Senior engineer/ researcher (scientific and technical design) degree II, responsible for flight dynamics and control activities, scientific manager at INCAS
Main activities and responsibilities	<ul style="list-style-type: none"> <li>-stability and control studies for permanent assisted control of airships; a new model and procedure</li> <li>-studies and conceptual design for a “free wing aircraft”(mechanical subsystems and propeller system)</li> <li>-flight dynamics for the experiment regarding solar eclipse</li> <li>-conceptual design of algorithm and general scheme of the automatic control for an UAV (unmanned aircraft-common configuration); control laws generation to follow a given flight path</li> <li>-performance and dynamics (stability and control) of a sea plane; general model for quasi-steady flights relative to the trajectory</li> <li>-dynamics of control subsystem for the aircraft IAR-99 with numerical simulation of an hydraulic device</li> <li>-studies regarding flight mission control, programming and stability for a space reusable vehicle; new method to derive control laws using an algebraic model for constraints</li> <li>-PhD Thesis concerning theory and applications regarding the problem of pursuing a desired trajectory, as a constraint of the flight mission; mainly for space vehicles</li> <li>-coordination of department activities</li> </ul>
Name and address of employer	<b>National Institute of AeroSpatial Research and Development, INCAS; Bucharest, Romania</b>
Type of business or sector	Flight Dynamics Department
Dates	<b>1992 -1995</b>
Occupation or position held	Senior engineer/ researcher (scientific and technical design) degree II, responsible for flight dynamics activities
Main activities and responsibilities	<ul style="list-style-type: none"> <li>-stability and control studies for the aircraft with free wing; dynamic model for the controlled flight of such an airplane</li> <li>-preliminary plans of an airplane with free wing; structure design of engine unit support; preliminary plan for the propeller system; conceptual design of a kinematic scheme for the control system</li> <li>-dynamics and control of an unmanned aircraft (unconventional configuration) and of a hot air balloon</li> <li>-analysis of experimental results</li> <li>-stability of unsteady flights, controlled along the trajectory; development of new criteria</li> <li>-theory and simulations for tracking control along a given flight path</li> <li>-coordination of department activities since 1993</li> </ul>
Name and address of employer	<b>Institute of Fluid Mechanics and Flight Dynamics, IMFZ-SA ; (the same institute but having another name); Bucharest, Romania</b>
Type of business or sector	Flight Dynamics Department
Dates	<b>1980 -1992</b>
Occupation or position held	research engineer (scientific and technical design)

Main activities and responsibilities	-aerodynamic data calculations for the aircrafts IAR-93, IAR-95, IAR-99, IAR-701, IAR-705, MM-241; procedures using closed formulae and diagrams, comparison with experimental and finite element methods results -performance, stability and flying qualities for IAR-93, IAR-95, IAR-99, IAR-701, IAR-705, MM-241 -flight simulations for IAR-705 and missile MM-241; an aircraft simulator model for IAR-99 -dynamics and control during taxiing for IAR-701, IAR-705, IAR-99 -specifications for/ flight testing program and analysis of final experimental results for IAR-93, IAR-99, IAR-824 -expert' s reports regarding flight breakdown of a bomber and training and fighter aircrafts -program manager for MM-241 missile (regarding the activities developed at INCREST); design and research for the FMS and the FCS
Dates	<b>1981 -1992</b>
Occupation or position held	Associate lecturer
Main activities and responsibilities	Technical mechanics– seminars and laboratory
Name and address of employer	<b>Polytechnica University - Bucharest</b>
Type of business or sector	Technical Mechanics Department
Dates	<b>1980 -1981</b>
Occupation or position held	Associate lecturer
Main activities and responsibilities	Fluid mechanics – seminars and laboratory
Name and address of employer	<b>Petroleum – Gas University of Ploiesti</b>
Type of business or sector	Thermodynamics and Fluid Mechanics Department
Dates	<b>1977 -1980</b>
Occupation or position held	design engineer, technical quality assurance inspector
Main activities and responsibilities	Aircraft structure and components design and analysis: Second subsystem for control operation of the powered-glider IS-28M2 Winch support to keep up the powered-glider IS-28M2 Tail-skid for the aircraft IAR 824C Technological design of tail-skid components Structural design of rear fuselage for the sailplane IS-28M2 Landing gear for the aircraft IAR-824C (project evaluation and design modifications) Components for the landing gear of IAR-824C (new design and design modifications) Technical quality inspector, technologist for simple elements and complex components
Name and address of employer	<b>Aircraft Company IAv - Brasov, Romania</b>
Type of business or sector	Department of Aircraft Design; Department of Quality Assurance
Dates	<b>1976 -1977</b>
Occupation or position held	technologist and quality assurance engineer
Main activities and responsibilities	regular maintenance, final adjustments, ground and in flight tests after regular maintenance, technical controls
Name and address of employer	<b>Utilitarian Aviation Company; Bucharest, Romania</b>

Type of business or sector | techologist and quality assurance engineer

## Education and training

Dates | **1994**

Title of qualification awarded | graduate certificate

Principal subjects/occupational skills covered | Management of Research Activities

Name and type of organisation providing education and training | **"Research and Technology Minister" and directed by Scient Consult Ltd.**

Level in national or international classification | university level

Dates | **1991-2001**

Title of qualification awarded | Ph. D for Aerodynamics and Flight Dynamics

Principal subjects/occupational skills covered | "Dynamics and Control Studies concerning Pursuing Problems"

Name and type of organisation providing education and training | **Polytechnic University of Bucharest**

Level in national or international classification | post graduate university level

Dates | **1977-1983**

Title of qualification awarded | diploma degree

Principal subjects/occupational skills covered | Mathematics (Mechanics and IT related Theory and Methods)

Name and type of organisation providing education and training | **University of Bucharest**

Level in national or international classification | university level

Dates | **1971-1976**

Title of qualification awarded | diploma degree

Principal subjects/occupational skills covered | aircraft design, manufacturing and technological analysis, structure analysis for aerospace vehicles, flight dynamics and control, flying qualities, aerodynamics and fluid dynamics,

Name and type of organisation providing education and training | **Polytechnic University of Bucharest  
Department of Aerospace Engineering**

Level in national or international classification | university level

## Personal skills and competences

Mother tongue(s) **romana**

Other language(s) **english, french**

Self-assessment

*European level (\*)*

**Language**

**Language**

	Understanding		Speaking		Writing	
	Listening	Reading	Spoken interaction	Spoken production		
english	well	well	well	well	well/ excelent	
french	well	well	well	well	well	

(\*) Common European Framework of Reference for Languages

Social skills and competences

Organisational skills and competences

Project manager for 4 romanian projects and responsible for the FQ activities of romanian participation at european projects  
Responsible for Flight Dynamics SW tool, regarding handling qualiies  
Department manager over 17 years  
Scientific manager at INCAS from 2007 till 2015

Technical skills and competences

As derived from "work experience"

Computer skills and competences

Usual ones: MsWindows Office, Matlab, Mathcad, programming language as FORTRAN

Artistic skills and competences

Fine Arts School (4 years)

Other skills and competences

Driving licence

personal auto - driving licence B

**Additional information**

Membership in Professional Societies:

AGIR since 1992 (engineers' Romanian society)

ROMAI since 1994 (Romanian society, concerning applied mechanics and mathematics)

GAMM since 1995 (German society, concerning applied mechanics and mathematics)

AIAA since 1995 till 1997

Associated assistant lecturer at:

Polytechnic University of Bucharest; Bucharest, Romania,

1981 – 1992/ 2014-2024/ Catedra de Mecanică

2016-2024/ Facultatea Ingineria Sistemelor Aeronautice

Oil and Gases Institute; Ploiesti, Romania, 1980 - 1981

**Annexes**

Papers and communications at national and international conferences

1. Radnef Sorin, *Steady Flight Relative to Trajectory*, The Second Conference of Applied and Industrial Mathematics, ROMAI, Oradea, August 1994, Romania

2. Radnef Sorin, Manolescu H., *Development of a missile program, ship-to-ship type, by side of effective production* (following a tested design solution), The Third Scientific Session "Design and Manufacture of Ships, Armament and Fight Technics for The Navy", section: armament and dredgers' equipment, Constanta, October 1994, Romania

3. Radnef Sorin, *From Optimal Solutions on the Reduced Dynamic Model of Symetric Flight to Near-optimal Controls on the Dynamic Model*, International Congress on Industrial and Applied Mathematics", Jul. 3-7 1995, Hamburg, Germany

4. Radnef Sorin, *Dynamic Model for the Controlled Motion along a Given Flight Path*, AIAA -

- Atmospheric Flight Mechanics Conference, paper 95-3485, August 1995, Baltimore, MD, USA
5. Radnef Sorin, *An Inverse Problem Concerning Flight Dynamics with Rotors Influence*, International Conference on Dynamics of Rotor Systems, 21-23 May 1996, Kamenets-Podolsky, Ukraine
  6. Radnef Sorin, *A General Inverse Problem in Controlled Flight Movement*, South African Conference on Applied Mechanics, Proceedings of 2 July 1996, Eskom Midrand, Gauteng, South Africa
  7. Radnef Sorin, *A Deep Modelling of Dynamics for RPV's Flight Controllability*, Proceedings of RPV's Twelfth International Conference, 9-11 September 1996, Bristol, United Kingdom
  8. Radnef Sorin, Tecuceanu George, *A Proper Robust Design of RPV 's Flight Control System*, Proceedings of RPV's Twelfth International Conference, 9-11 September 1996, Bristol, United Kingdom
  9. Radnef Sorin, *Single Point Based Navigation Algorithm*, The 4th Saint Petersburg International Conference on Integrated Navigation Systems, 26-28 May 1997, Saint Petersburg, Russia
  10. Radnef Sorin, *Extended Steady Flights: Trajectories, Control and Stability*, AIAA - Atmospheric Flight Mechanics Conference, paper 97-3651, 11-13 August 1997, New Orleans, LA, USA
  11. Radnef Sorin, *Stability of Motion along the Trajectory (Flight Path)*, Second International Conference on Differential Equations and Dynamical Systems, August 1-4 1997, Waterloo, Canada
  12. Radnef Sorin, *Active Control of Flight using Intrinsic Adaptive Algorithm*, Second South African Conference on Applied Mechanics (SACAM '98), January 12 - 15, 1998, UCT Center for Research in Computational and Applied Mechanics University of Cape Town, South Africa
  13. Radnef Sorin, *Controlul zborului – Navigatia autonoma*, Congres of American Romanian Academy of Arts & Sciences, 2002, Universitatea Oradea, Romania
  14. Radnef Sorin, *Controlul stabilizant al evolutiilor, unei nave spatiale, in vecinatatea unui corp atractiv*, Conferinta de Matematica Aplicata si Industriala – ROMAI, 2002, Universitatea Pitesti, Romania
  15. Radnef Sorin, *Structural stable solutions of Differential Algebraic Equations*, The 5<sup>th</sup> Congress of Romanian Mathematicians, 2003, Universitatea Pitesti, Romania
  16. Radnef Sorin, *A versatile solution of "tracking problem" for nonlinear systems*, Conferinta de Matematica Aplicata si Industriala – ROMAI, 2003, Universitatea Oradea, Romania
  17. Radnef Sorin, *Differential modelling of DAEs solutions*, International Conference on Theory and Applications of Mathematics and Informatics, 2003, Universitatea 1 Decembrie, Alba Iulia, Romania
  18. Radnef Sorin, *Differential modelling of DAEs solutions for flight control*, International Conference on Nonlinear Problems in Aviation and Aerospace, 2004, Universitatea de Vest, Timisoara, Romania
  19. Radnef Sorin, *Stabilising control for flight behaviour in the proximity of a planet*, International Conference on Nonlinear Problems in Aviation and Aerospace, 2004, Universitatea de Vest, Timisoara, Romania
  20. Radnef Sorin, *Coordinates of intrinsically defined curves*, Conferinta de Matematica Aplicata si Industriala – ROMAI, 2004, Universitatea Pitesti, Romania
  21. Radnef Sorin, *Control Laws Free of Smooth Perturbation Terms*, ICTAMI 05 – International Conference on Theory and Applications of Mathematics and Informatics, Alba Iulia, 2005, Acta Universitatis Apulensis-Mathematics Informatics- no 11 2006
  22. Radnef Sorin, *Analytic Solution of Non Autonomous Linear ODE*, GAMM 2006 Annual Conference, 27-31 martie 2006, Berlin, Germania, PAMM 2006
  23. Radnef Sorin, *Stability by Thrust Control for Satellites at low Altitudes*, al 5-lea Congres Internațional de Analiză Neliniară - WCNA 2008, 2 – 9 iulie 2008, Orlando - Florida, SUA, organizat de Federația Internațională de Analiză Neliniară - IFNA
  24. Radnef Sorin, *Stability by Thrust Control for Satellites at low Altitudes*, Journal of Nonlinear Analysis, 2009
  25. Radnef Sorin, *DAEs Solutions with Dichotomic Structure*, ICTAMI 09 – International Conference on Theory and Applications of Mathematics and Informatics, Alba Iulia, 2009

Main projects and my responsibilities:

**a. projects**

1. Programul IAR – 93, inginer aerodinamica 1980 – 1983, inginer dinamica zborului 1984 - 1987
2. Programul IAR – 99, inginer aerodinamica 1980 – 1983, inginer performante 1983 – 1984, inginer dinamica zborului 1985 - 1989
3. Programul IAR – 95, inginer aerodinamica 1981 – 1983, inginer performante 1984 – 1985,

inginer dinamica zborului 1985 - 1987

4. Programul MM – 241, coordonator program, inginer pentru aerodina-mica si dinamica zborului 1987 -1989

5. Programul IAR – 701, inginer dinamica zborului 1985 - 1989

6. Orizont 2000/ Studii privind bazele teoretice ale Dinamicii Zborului: Stabilitate, Comanda, Optimizare, Robustete, responsabil de tema, responsabil cu activitatile privind stabilitatea si controlul zborului 1992 - 1998

7. Orizont 2000/ Cercetare – Dezvoltare privind analiza si sinteza in dinamica zborului, responsabil de tema, responsabil cu activitatile privind organizarea si algoritmul de functionare a sistemului de asistare a controlului curent 1992 - 1998

8. AeroSpatial/ Sistem aeropurtat de avertizare de tip minielicopter/ responsabil cu activitatile de stabilitate si control al zborului 2002 - 2004

9. AeroSpatial/ Dinamica si Controlul Zborului in lungul Traiectoriei, Director de proiect, responsabil cu activitatile privind generarea legilor de control in evolutii cu restrictii 2003 - 2005

10. AeroSpatial/ Dinamica si controlul elicopterului in fazele terminale maritime, Director de proiect, responsabil cu activitatile privind dinamica si controlul elicopterului 2004 – 2006

11. Centrul de Competenta Romano Olandez in Ingineria Aerospatiale/ Operation of helicopters on board of ships. Responsabil pentru partea romana, Dinamica si controlul elicopterului in situatii de zbor specifice 2005 - 2008

12. AeroSpatial/ {sateliti la joasa inaltime}/ Director de proiect

13. AeroSpatial/ {lansare-recuperare space ships}/ Director de proiect

14. Star/ DYLARPHA/ Director de proiect

15. EC FP6/ CESAR/ Subtask leader

16. EC FP7/ ESPOSA/ Subtask leader

17. Dinamica și Controlul Sistemelor Mecanice cu Rotori - Raport de Consultanță Științifică, 2020-2022

18. Caracteristicile inerțiale ale aeronavelor – Avion IAR-99SM. Procedura generală și programul generic tip Excel aferent în cadrul programului de upgradare 2022-2024

**b. responsibilities**

Research and development regarding Flight Dynamics Synthesis and Analysis/  
Cercetare - Dezvoltare privind Sinteza și Analiza în Dinamica Zborului,  
Analysis and Synthesis of control system and configuration for aero- and astro-ships  
having prescribed missions/ Analiza și sinteza configurației și sistemului de control pentru aero- și astro- nave cu misiuni impuse,  
Research and development regarding the fundamentals of controlled flight dynamics/  
Cercetare-dezvoltare privind fundamentele dinamicii zborului comandat (Stabilitate și Controlabilitate, Control Optimal),  
Flight dynamics and control along the trajectory/ Dinamica și Controlul Zborului în Lungul Traiectoriei,  
Helicopter flight dynamics and control for terminal marine flight phases/ Dinamica si Controlul Elicopterului în Fazele Terminale Maritime,  
Operation of helicopters on board of ships –proiect romano olandez- .  
Permanent System of Satellites having a controlled Trajectory at LEO/ Sistem satelitar permanent cu traectorie controlata, la joasa altitudine  
Dynamic Launching and Recovery Procedures from High Altitudes/ Proceduri de Lansare si Recuperare Dinamica de la Mari Inaltime

Date: 05.04.2024

Signature: