MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

CURRICULUM VITAE (maximum 4 pages)

CV date	15/10/2019

Part A. PERSONAL INFORMATION

First and Family name	Jesús Ureña Ureña		
Social Security, Passport, ID number	52530736R	Age	54
Researcher numbers	Researcher ID	R-5385-2017	
	Orcid code	0000-0003-1408-6039	

A.1. Current position

Name of University/Institution	Universidad de Alcalá; Spain		
Department	Departamento de Electrónica. Escuela Politécnica		
Address and Country	Campus Unversitario s/n , Alcalá de Henares, Madrid, Spain		
Phone number		E-mail	jesus.urena@uah.es
Current position	Professor (CU)	From	20/10/2010
Espec. cód. UNESCO	3304 (17); 3307(03, 15); 3311(01, 02, 07)		
Palabras clave	Mobile Robots, Sensory Systems, Local positioning, Electronic Control, Smart Spaces, Intelligent Transport Systems.		

A.2. Education

Degree/PhD	University	Year
Ing. de Telecomunicación (Degree)	Universidad Politécnica de Madrid, Spain.	15-10-92
Doctor Ing. Telecomunicación (PhD)	University of Alcalá, Spain	30-04-98

A.3. JCR articles, h Index, thesis supervised…

Positive evaluation of four research periods of six years (Spanish regulations): 1992-1997, 1998-2003, 2004-2009 and 2010-2015. Supervision of 6 doctoral theses in the last 10 years (from 2008 onwards), 5 with international doctorate mention and 2 with final award from the UAH. A total of 45 papers published in JCR-indexed journals (last 10 years), 24 of them in the first quartile (Q1). According to Google Scholar, these papers have a total of 2515 citations, of which 1190 since 2014 (that is, approximately 238 citations/year). The h index is 25 (17 since 2013) and the i10 index is 69 (40 since 2014). Researchgate Score: 34.56 (https://www.researchgate.net/profile/Jesus_Urena), above 92,5% of all the members.

Part B. CV SUMMARY *(max. 3500 characters, including spaces)*

Dr. Jesús Ureña Ureña holds a degree in Telecommunications Engineering from the Polytechnic University of Madrid and a PhD in Telecommunications Engineering from the University of Alcalá. He is currently Full Professor at the University of Alcalá, in the area of Electronic Technology. He has been Director and Secretary of the Electronics Department of the University of Alcalá. He has participated in 25 publicly funded R&D projects (12 as Principal Investigator - 6 of them as General Coordinator of Coordinated Projects). Participation in more than 30 private financing contracts with companies and administrations (more than half as responsible). The topics addressed in research covers the areas of mobile robotics, multisensorial integration, ultrasound sensors, implementation of algorithms in hardware, electronic control and actuation, positioning systems and electronic and information technologies applied to transport. The results of the research projects have been the subject of numerous publications in journals (more than 70 international publications in indexed journals) and national and international conferences (more than 150 papers). It should be noted that these articles have been published in different journals - going through reviews of very varied committees - many of them of the best in their respective categories. It is also worth highlighting the publications in journals that are highly valued in the applied engineering sector: e.g. IEEE Proceedings, IEEE Trans. on Robotics, IEEE Trans. on Signal Processing, IEEE Trans. on Ultrasonics, Ferromagnetics and Frequency Control, IEEE Trans. on Instrumentation and Measurements, IEEE Robotics and Automation Magazine, ... On the other hand, many of the developed works have given rise to practical electronic systems that have been and are the object of industrial exploitation (co-inventor in 8 patents). Positive evaluation, of four

consecutive 6year-periods of research (1992 to 2015) by the (Spanish) National Commission for the Evaluation of Research Activity. She has directed or co-directed a total of 16 doctoral theses, within a doctoral program with a Quality Mention since 2003, 8 of the thesis with European doctorate recognition, one in international co-supervision (double degree) and 7 that have obtained the award for the best thesis in the University of Alcalá. The university teaching experience started in the 1985/86 academic year, teaching up to 12 subjects Degree, Master and Doctorate). Stay of several months in European and Latin-American Centers: LASMEA at Blaise Pascal University (France), Intelligent Systems Centre at Algarve University (Portugal), ... He has also participated in the organization of conferences, being General chair in the 5th IEEE International Symposium on Intelligent Signal Processing - WISP'07, 3rd Workshop on Biomimetic Ultrasound, and in the 7th International Conference on Indoor Positioning and Indoor Navigation (IPIN), held in Alcalá de Henares in October 2016. Member of the IPIN Steering Committee and of different Technical Committees in national and international conferences (I2MTC, VICIMS, ETFA, WISP, ROSE, IPIN, ...) and, currently, Associate Editor of the journals “Sensors” and “IEEE Transactions on Instrumentation and Measurements". Vice-president of the Spanish chapter of the IEEE Instrumentation and Measurements Society. Participation in 2016, as an expert of the Ministry (MINECO), in the Technical Project Commission of the National R&D Plan in the area of Computer Sciences Technologies (TIN).

Part C. RELEVANT MERITS

C.1. Publications (including books) – [most relevant in the last years]

Martín Colombo; Álvaro Hernández; Jesús Ureña. “Low-Complexity Joint Time Synchronization and Channel Estimation for OFDM-Based PLC Systems. IEEE Access, Volume: 7, Issue: 1 Pages: 121446-121456; 0.1109/ACCESS.2019.2937472, December **2019.** JCR, IF: 4.098. (52 out of 265 in “Eng., Electrical & Electronic”).

David Gualda, Jesús Ureña , José Alcalá and Carlos Santos. “Calibration of Beacons for Indoor Environments based on a Digital Map and Heuristic Information”. Sensors, Vol: 19, Issue: 670 Pages: doi:10.3390/s19030670, January **2019**. JCR, IF: 2.475.(16 out of 61 in “Instruments & Instrumentation”).

Jesus Ureña, Álvaro Hernández, Juan Jesús García, José Manuel Villadangos, M. del Carmen Pérez, David Gualda, Fernando Álvarez, Teodoro Aguilera. “Acoustic Local Positioning With Encoded Emission Beacons”. *Proceedings of IEEE*, Vol. 106(6), Pages: 1042-1062, June **2018**. JCR IF: 9.237 (5 out of 262 in “Engineering, Electrical & Electronic”).

David Gualda, Jesús Ureña, Juan C. García, Enrique García, José Alcalá. “Simultaneous calibration and navigation (SCAN) of multiple ultrasonic local positioning systems”. *Information Fusion*, 45 (**2018**) 53–65. JCR IF: 5,667 (4 out of 104 in “Computers Sic., Theory & Methods”).

F. Espinosa, J. J. García, A. Hernández, M. Mazo, J. Ureña, J. A. Jiménez, I. Fernández, C. Pérez, J.C. García. “Advanced Monitoring of Rail Breakage in Double-Track Railway Lines by means of PCA Techniques Applied Soft Computing”. *Applied Soft Computing*, Vol. 63, Feb. **2018**, 1-13. JCR IF: 3.541 (14 out of 105 in "Comp. Sc., Interdisciplinary Applications").

José Alcalá, Jesús Ureña, Álvaro Hernández, David Gualda. “Sustainable Homecare Monitoring System by Sensing Electricity Data”. *IEEE Sensors Journal*, Vol. 17(23), 7741-7749, Dec. **2017**. JCR IF: 2.617 (14 out of 61 in “Instruments & Instrumentation”)

José Alcalá, Jesús Ureña, Álvaro Hernández, D. Gualda. ”Event-based Energy Disaggregation Algorithm for Activity Monitoring from a Single-Point Sensor”. *IEEE Trans. on Inst. and Meas.* V. 66(10), 2615 – 2626, **2017**. JCR IF: 2,794 (11 out of 61 in “Instrum. and Instrumentations”).

Alcalá, J.M.; Ureña, J.; Hernández, Á.; Gualda, D. “Assessing Human Activity in Elderly People Using Non-Intrusive Load Monitoring”. *Sensors,* Vol 17 (2), 351, 1-17, Feb. **2017**. JCR IF: 2.033 (12 out of 56 in Instruments & Instrumentation”)

David Gualda, Jesús Ureña, Enrique García. “Partially Constrained Extended Kalman Filter for Navigation Including Mapping Information”. *IEEE Sensors Journal*, Vol. 16 (24), 9036 - 9046, Oct. **2016**. JCR IF: 1.473 (20 de 61 in “Instruments & Instrumentation”)

F. Espinosa, Á. Hernández, M. Mazo, J. Ureña, M.C. Pérez, J. A. Jiménez, I. Fernández, J.C. García, and J.J. García. “Detector of Electrical Discontinuity of Rails in Double-Track Railway

Lines: Electronic System and Measurement Methodology". *IEEE Trans. on Intelligent Transp. Syst.*, Vol. 18 (4), 743 – 755, April **2017.** JCR IF: 2.534 (8 out of 33 in "Transport. Sc.&Tech.")

Juan Jesús García, Álvaro Hernández, Jesús Ureña and Enrique García. "FPGA-Based Architecture for a Multisensory Barrier to Enhance Railway Safety". *IEEE Trans. on Inst. and Meas.,* 65(6), 1352-1363, **2016**. JCR IF: 2,794 (11 out of 61 in "Instrum. & Instrumentations").

Alejandro Lindo, Enrique García, Jesús Ureña, M. Carmen Pérez and Álvaro Hernández. "Multiband Waveform Design for an Ultrasonic Indoor Positioning System". *IEEE Sensors Journal*, 15(12), 7190-7199, Dec. **2015.** JCR IF: 1.473 (20 out of 61 in "Instruments & Instrumentation").

C.2. Research projects and grants

Title of the contract/project: "Design and development of a system for detection and analysis of physical activity and behavioral patterns to aid in the diagnosis of frailty (FrailCheck)".
Financial institution: Junta de Com. de Castilla La Mancha (SBPLY/17/180501/000392)
Participating entities: University of Alcalá, Universitary Hospital of Guadalajara
Duration, from: 01/09/2018 until: 31/08/2021
Amount of subsidy: 125,630 €.
Principal Investigators: J. Jesús García Domínguez / Ana Jiménez Martín
Number of researchers participating: 11 (8 by UAH, 3 HUG)

Title of the contract/project: "Improvement and robustness of indoor location systems for applications in robotics and assistance to people (TARSIUS)".
Financial institution: Ministry of Economy and Competitiveness (TIN2015-71564-C4-1-R)
Participating entities: University of Alcalá, CSIC and University of Extremadura
Duration, from: 01/01/2016 until: 31/12/2018. Amount of the UAH subsidy: 106,359 €.
Principal Investigators: Jesús Ureña Ureña (Coordinator) / J.Jesús García Domínguez
Number of researchers participating: 10 by the UAH.

Project title: Indoor Positioning and Navigation Network (REPNIN).
Financial institution: Ministry of Economy and Competitiveness (ref. TEC2015-71426-REDT).
Participating entities: Univ.of Alcalá, Univ. Politécnica de Madrid, Univ. de Extremadura, Univ. of Vigo, Univ. of Deusto, Univ. Jaume I, Univ. of Granada, Univ. Oberta de Catalunya.
Duration, from: 01/01/2016 to: 31/12/2017. Amount of the grant: € 30,000.00.
Researcher in charge: Dr. D. José Luis Lázaro Galilea.
Number of researchers participating: 14.

Title of the contract/project: "Cooperative location systems for people and mobile robots in diverse environments (LORIS)".
Financial institution: Ministry of Economy and Competitiveness (TIN2012-38080-C04-01)
Participating entities: Univ. of Alcalá, CSIC, Univ. of Valladolid and Univ. of Extremadura
Duration, from: 01/01/2013 until: 31/12/2015 Amount of the UAH subsidy: € 98,935.20.
Principal Investigator and General Coordinator: Jesús Ureña Ureña
Number of researchers participating: 8 by the UAH

Title of the contract/project: "Technologies for the Automated and Intelligent Management of Future Energy Distribution Networks" (ENERGOS).
Funding entity: Ministry of Science and Technology (CENIT Programme -2009)
Participating entities: INDRA Sistemas SA, University of Alcalá (in the specific tasks UAH)
Duration, from: 01/10/2009 to: 31/12/2012 Amount of the UAH subsidy: €362,975
Responsible researcher: Jesús Ureña Ureña
Number of researchers participating: 8 by the UAH

Project title: Dev. of Digital Telephony Tech. for Safety Proc in Railway Traffic (eBR).
Funding entity: MICINN. IPT-2011-1059-370000
Participating entities: University of Alcalá, Logytel S.L, ADIF
Duration from: 01/07/2011 to: 31/10/ 2013 Amount of the UAH subsidy: UAH: €172,262.00
Researcher in charge: Manuel Mazo Quintas
Number of participating researchers (UAH): 8 (total: 26)

C.3. Contracts

Title of the contract/project: System for the simultaneous detection of electrical discontinuity of rails on double-track lines -SD3-.

Type of contract: ART. 83. Ref UAH-98/2012
Funding Company/Administration: Inabensa
Participating entities: University of Alcalá
Duration, from: 25/10/2012 until: 15/05/2014 Total amount of the project: 370.260 €.
Researcher in charge: Felipe Espinosa Zapata
Number of researchers participating: 8

Title of the contract/project: Drafting of research reports in the railway transport sector.
Type of contract: Art. 83 L.O.U.
Funding Company/Administration: Kuitver S.L.
Participating entities: University of Alcalá.
Duration, from: 05/04/2013 until: 04/01/2014 Total amount: 57.000 €.
Responsible researcher: Dr. Manuel Mazo Quintas and Dr. Jesús Ureña Ureña.
Number of researchers participating: 11.

Title of the contract: "Drafting of the technical specifications for the project of Remote Control of Auxiliary Systems and Detectors linked to the Conventional Railway Network".
Type of contract: Art. 83 L.O.U. (contract no. 136/2011)
Funding Company/Administration: ADIF
Participating entities: University of Alcalá.
Duration: 13/12/2011 until: 13/03/2012 Total amount: €124,490
Responsible researcher: Manuel Mazo
Number of participating researchers: 4

C.4. Patents

Inventors: E. García, J. Ureña, D. Gualda, A. Hernández, F. Nombela
Title: Transmission procedure and estimation of arrival time in acoustic location systems based on DFT-S-DMT modulation
Application No: P201500540 Country of priority: Spain. Priority date: 22/7/2015
Entity: University of Alcalá Countries to which it has spread: Spain.

Inventors: F. Espinosa, M. Mazo, J. Ureña, A. Hernández, J.A. Jiménez, I. Fernández, M.C.
Pérez, J.C. García, J.J. García, J.C. Cortes, R. Arévalo.
Title: System and method for detecting rail breakage on a railway line. System and method for detecting broken rails on a railway line.
Application No: P201431338 / PCT/ES2015070656 Country of priority: Spain / Europe.
Priority date: 15/09/2014. Entity: Instalaciones INABENSA S. A.
Countries to which it has been extended: Spain, European Patent Office.
Company/s that are exploiting it: Instalaciones INABENSA S. A.

Inventors: F. Cruz, F. A. Pinto, M. Blanco, F. J. Reynoso, A. Hernández, J. Ureña.
Title: Method of reception (demodulation) of wavelet-OFDM multi-carrier signals, corresponding devices to receive.
Application No: P201400556 Country of priority: Spain. Priority date: 09/07/2014.
Entity: University of Alcalá. Countries to which it has been extended: Spain

Inventors: J. Ureña, A. Hernández, A. Jiménez, C. Diego, F. J. Álvarez
Title: Use of pseudo-orthogonal sequences in phased array systems for simultaneous scanning in multiple directions.
Application No: P201230295 Country of priority: Spain Priority date: 28/02/2012.
Entity: University of Alcalá, University of Extremadura
Countries to which it has been extended: Spain

C.5, C.6, C.7 (e. g., Institutional responsibilities, memberships of scientific societies…)

Director and Secretary of the Electronics Department in UAH. Associate Editor of the journals “Sensors” and “IEEE Transactions on Instrum. and Meas.". Vice-president of the Spanish chapter of the IEEE Instrum. and Meas. Society. Member of the Indoor Positioning and Indoor Navigation (IPIN) Steering Committee and of different Technical Committees in national and international conferences (I2MTC, VICIMS, ETFA, WISP, ROSE, IPIN, ...).