

Universitat Autònoma de Barcelona
Department of Telecommunications and Systems Engineering
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EDUCATION

- 07/2002 – 03/2007 **PhD (cum laude) in Telecommunication Engineering**, Universitat Politècnica de Catalunya. Dissertation title: “Coherent and non-coherent ultra-wideband communications”. Supervisor: Prof. Gregori Vázquez. Conducted research in signal processing for synchronization and detection of UWB random waveforms.
- 09/1996 – 09/2001 **MSc in Telecommunication Engineering**, ETSETB, Universitat Politècnica de Catalunya. Final thesis (cum laude) in the design and implementation of the on-board demodulation module of the Amerhis satellite payload.

ACADEMIC AND RESEARCH POSITIONS

- 06/2021 – Present **Professor, Universitat Autònoma de Barcelona.**
Tenured position involving research, management and teaching (BSc, MSc, PhD).
- 09/2013 – 05/2021 **Associate Professor, Universitat Autònoma de Barcelona.**
Tenured position involving research, management and teaching (BSc, MSc, PhD).
- 08/2014 – 01/2015 **Scientific Research Officer, European Commission**, DG Joint Research Center (JRC), Ispra, Italy. Researcher at the Institute for the Protection and Security of the Citizen (IPSC), conducting research on the interference assessment of amateur TV emissions onto Galileo E6 receivers.
- 09/2006 – 09/2013 **Assistant Professor, Universitat Autònoma de Barcelona.**
Tenure-track position involving research, teaching and management duties.
- 09/2001 – 09/2006 **Research Assistant, Universitat Politècnica de Catalunya**, Dept. of Signal Theory and Communications. Involved in 10+ research projects dealing with synchronization techniques for digital receivers, satellite communications and iterative decoding algorithms.
- 09/2000 – 09/2001 **DSP Engineer**, Alcatel Espacio S.A. Involved in the design and simulation of the demodulation module for the DVB-A9343 on-board processor.

ACADEMIC MANAGEMENT POSITIONS

- 07/2015 – 06/2019 **Director of the Telecommunications Engineering Section, Universitat Autònoma de Barcelona.**
Responsible for all academic matters including program planning, strategy, outreach, and economic management of Telecommunication engineering studies.
- 05/2011 – 06/2019 **Coordinator of the BSc degree in Telecommunication Engineering Systems, Universitat Autònoma de Barcelona.**
Responsible for curricular matters, teaching planning, advisement, quality assurance and supervision of the BSc degree.
- 05/2011 – 09/2016 **Coordinator of the Telecommunication Engineering degree, Universitat Autònoma de Barcelona.**
Responsible for all academic matters of the (non-EHEA) 5-years degree on Telecommunication Engineering, and supervision of its discontinuation in 2016.
- 07/2007 – 06/2019 **Coordinator of the Industrial Practice Program for Telecommunication Engineering students, Universitat Autònoma de Barcelona.**
Responsible for administering, promoting and supervising industry exchange agreements with students according to the curricula of the Telecom Eng. studies.

VISITING APPOINTMENTS

- 04/2016 (1 week) **Invited Lecturer, Chalmers University of Technology, Sweden.**
Lectured a course on LTE technology for joint communications and positioning.
- 12/2015 (1 week) **Visiting Professor, Hanyang University, Seoul, Korea.**
Collaborated with Prof. Sunwoo Kim in the context of quickest detection theory.
- 2010 – 13 (10 months) **Visiting Professor, University of California Irvine, USA.**
Hosted by Prof. A. Lee Swindlehutst at the Henri Samueli School of Engineering. Conducted research in filter-bank multicarrier signals and synchronization techniques for joint communications and positioning. (June–July 2013, April–June 2012, Feb.–April 2011, Feb.–Mar. 2010).
- 07/2011 – 09/2011 **Visiting Professor, University of Illinois at Urbana-Champaign.**
Hosted by Prof. Venugopal V. Veeravalli at the Coordinated Science Laboratory (CSL). Conducted research in distributed signal detection in wireless sensor networks.
- 05/2007 (1 week) **Visiting Scholar, University of Waterloo, Canada**
Participant at the IQC School on Quantum Information.

RESEARCH AREAS OF INTEREST

- _ Statistical signal processing for communications and navigation.
- _ Detection and estimation theory including sensor array and multichannel.
- _ Ultra low power positioning techniques for 5G and GNSS.
- _ Cloud signal processing techniques.

RESEARCH EXPERIENCE AND FUNDING

Involved in 55 research projects with a total funding of ~5.3 M€.

Principal investigator (PI) and Co-PI in 28 research projects with total funding ~2.9 M€.

- 03/2022 – 02/2023 **European Space Agency**, “DIVAL – Multipath and spoofing mitigation in handheld devices with diversity algorithms”, Contract no: AO/1-10909/21/NL/MGu. Partners: GMV (PT). Budget: 175,000€. **(PI)**
- 03/2022 – 02/2023 **European Space Agency**, “SINGPOS – Smart city single-node positioning testbed”, Contract no: AO/2-1813/21/NL/CRS/mkn. Partners: Loctio (GR). Budget: 65,000€.
- 02/2022 – 08/2023 **European Space Agency**, “OCTOPOS – Enabling technologies for advanced position-navigation-timing ground support networks”, Contract no: AO/1-10880/21/NL/CRS/mkn. Partners: Airbus (D), Airbus (F), Loctio (GR). Budget: 50,000€. **(PI)**
- 12/2021 – 11/2023 **Spanish Ministry of Science and Innovation**, “GGCAR-PoC – Proof of concept for accurate and precise positioning in vehicular environments based on GNSS and 5G systems”, Contract no: PDC2021-121362-I00. Partners: UAB. Budget: 97,000€. **(PI)**
- 01/2021 – 12/2023 **Spanish Ministry of Science and Innovation**, “GGIoT – Positioning for Internet of Things based on 5G/6G, low-energy GNSS and LEO PNT”, Contract no: PID2020-118984GB-I00. Partners: UAB. Budget: 63,500€. **(PI)**
- 12/2020 – 12/2022 **European Union Agency for the Space Programme**, “OSNMA+”, Contract no: GSA/GRANT/03/2019. Partners: Qascom (IT), UAV Navigation (ES). Budget: 171,400€. **(PI)**
- 08/2020 – 02/2021 **Tetramax**, “Edge Snapshot GNSS Receiver”, Contract no: H2020-ICT-04-2018, Call TETRAMAX-BILATERAL-TTX-4. Partners: Loctio (GR). Budget: 20,350€. **(PI)**
- 07/2020 – 12/2020 **European Space Agency**, “Earth-Moon Navigation / System Study and Development of a Highly-Sensitive Spaceborne Receiver Prototype”, Contract no: NAVISP-EL1-023. Partners: GMV (UK). Budget: 20,000€. **(PI)**
- 09/2019 – 09/2020 **European Space Agency**, “RF-SESMS – GNSS reference station environment monitoring unit”, Contract no: H2020-ESA-015-WO4. Partners: Indra (ES), Universitat Politècnica de Catalunya (ES). Budget: 17,000€.
- 02/2020 – 02/2021 **European Space Agency**, “INNUENDO – Enhanced GNSS signals in space and

	user receiver processing”, Contract no: AO-1-9585/19/NL/CRS. Partners: LINKS (IT), Airbus (D), Politecnico di Torino (IT), Tampere University (FI), Universität der Bundeswehr München (D). Budget: 41,800€.
06/2019 – 11/2020	European Space Agency , “Consolidation of tools for data analysis from the Monitor network”, Contract no: ESA-TECEFW-SOW-013139. Partners: UAB. Budget: 30,000€. (PI)
02/2019 – 02/2020	European Space Agency , “OLTBOC – Open Loop Techniques for High Sensitivity GNSS Receivers Applied to BOC Signals”, Contract no: AO/1-9439/18/NL/CRS. Partners: GMV (PT). Budget: 65,000€. (PI)
02/2019 – 12/2020	European Space Agency , “HANSEL – Navigation and GNSS in Smart Cities”, Contract no: AO/1-9494/18/NL/CRS. Partners: Rokubun (E), TrafficNow (E), Politecnico di Torino (IT), LINKS (IT). Budget: 120,000€. (PI)
12/2018 – 12/2020	European Commission , “FUNTIMES2 – Future Navigation and Timing Evolved Signals 2”, Contract no: 630/PP/GRO/RCH/17/9877. Partners: Airbus (D), ENAC (F), LINKS (IT). Budget: 60,000€.
09/2018 – 09/2020	European Space Agency , “EGNOS V3 NLES Long Loop Algorithm”, Subcontract no: 4600002775 with Indra. Budget: 202,000€. (PI)
05/2018 – 11/2019	European Space Agency , “GINTO5G – GNSS Integration into 5G Wireless Networks”, Contract no: AO/1-9045/17/NL/AS. Partners: GMV (E), DLR (D), Telefónica (E), University of Oulu (FI), u-blox (UK), UAB. Budget: 145,000€.
03/2018 – 09/2020	European Space Agency , “G2G Test User Rx Technologies” (framework contract), “WO1: Open Service Bread-board Emulating Mass-Market Platforms”, Contract no: AO/1-8662/16/NL/DB. Partners: GMV (E), UAB. Budget: 70,000€. (PI)
02/2018 – 01/2022	European GNSS Space Agency (GSA) , “Integration of Fundamental Elements” (framework contract), Contract no: GSA/OP/12/16. Partners: Everis, UAB, UPC, Canfield University, Ineco. Budget: ~300,000€ (depending on the amount of specific contracts being requested by the GSA). (PI)
01/2018 – 12/2021	Spanish Ministry of Economy and Competitiveness , “GGCAR – Accurate and Secure Localization in Vehicular Networks Using GNSS and 5G”, Contract no: TEC2017-89925-R. Partners: UAB. Budget: 146,894€. (PI)
10/2017 – 07/2018	European Space Agency , “GNSS Indoor/Outdoor Processing for Indoor Propagation Channel Characterization”, Contract no: 4000122035/17/NL/AF/hh. Partners: UAB. Budget: 36,000€. (PI)
12/2016 – 06/2018	European Space Agency , “SW/HW tools for cloud, hybrid and 5G positioning”, Contract no: 4000119070/16/NL/GLC. Partners: UAB. Budget: 350,000€. (PI)
05/2016 – 05/2017	European Space Agency , “HighOrbits – Techniques for GNSS navigation at high orbits (GEO/GTO/HEO)”, Contract no: AO/1-8349/15/NL/LF. Partners: GMV (E), Airbus (D). UAB budget: 35,000€. (PI)
10/2015 – 06/2016	European Space Agency , CCN to the contract no. AO/1-6918/11/NL/AT “ROCAT – Techniques for robust carrier phase tracking under high dynamic, strong fading and scintillation conditions”, Partners: GMVIS (P). UAB budget: 17,000€. (PI)
09/2015 – 04/2017	European Space Agency , “E-GNSS blind signal processing validation and performance methodology development”, Contract no: ESTEC 4000115110/15/NL/LF. UAB budget: 186,000€. (PI: Gonzalo Seco)
04/2015 – 12/2015	European Space Agency , “Development of a cloud GNSS receiver”, Contract no: ESTEC 4000113891/15/NL/HK. UAB budget: 25,000€. (PI)
01/2015 – 12/2018	Spanish Ministry of Economy , “GGPOS – Positioning in urban and adverse scenarios using GNSS and 5G systems”, Contract no: TEC2014-53656-R. UAB budget: 134,552€. (PI: Gonzalo Seco)
09/2014 – 09/2015	European Space Agency , “HiSens – Techniques for high sensitivity receivers”, Contract no: AO/1-7763/13/NL/AK. Partners: GMVIS (P), Ruag Space (A), Tecnalia (E). UAB budget: 63,000€. (PI: Gonzalo Seco)
09/2013 – 09/2014	European Space Agency , “ADAPT – Adaptive tracking techniques for navigation signals”, Contract no: AO/1-7389/12/NL/AK. Partners: GMVIS (P), EPFL (CH). UAB budget: 70,000€. (PI)
09/2013 – 09/2014	GMV Aerospace and Defence , “NLOS positioning algorithm for cellular networks based on ToA & AoA measurements”. Private contract. UAB budget: 6,000€. (PI)

- 11/2012 – 10/2013 **European Space Agency**, “MoonGNSS – Weak GNSS signal navigation on the Moon”, Contract no: AO/1-7097/12/NL/AT. Partners: GMV (E). UAB budget: 67,500€. (PI: Gonzalo Seco)
- 07/2012 – 07/2014 **European Space Agency**, “ROCAT – Techniques for robust carrier phase tracking under high dynamic, strong fading and scintillation conditions”, Contract no: AO/1-6918/11/NL/AT. Partners: GMVIS (P). UAB budget: 69,160€. (PI)
- 06/2012 – 01/2014 **European Commission**, “iGNSSrx – Integrity GNSS receivers”, Contract no: ENTR/129/PP/ENT/SP2/11/5502. Partners: GMV (E), NSL (UK), TRL (UK). UAB budget: 197,692€. (PI: Gonzalo Seco)
- 03/2012 – 03/2015 **Spanish Ministry of Economy**, “Desarrollo de técnicas anti-jamming y anti-spoofing para sistemas GNSS”, Contract no: EIC-ESA-2001-0079. UAB budget: 130,000€. (PI)
- 10/2012 – 10/2013 **Balsells Foundation, University of California Irvine**, “Multicarrier signals for combined communications and positioning. Contribution to positioning in LTE”, Partners: UCI (USA). Budget: 12,500\$. (CoPI with A. Lee Swindlehurst)
- 01/2012 – 12/2014 **Spanish Ministry of Science and Innovation**, “SICCNALS – Signals for combined communication and navigation systems: theoretical bounds, design and implementation aspects”, Contract no: TEC2011-28219. UAB budget: 53,845€. (PI: Gonzalo Seco)
- 10/2011 – 10/2012 **Balsells Foundation, University of California Irvine**, “Multicarrier signals for combined communications and positioning. Contribution to synchronization in LTE”, Partners: UCI (USA). Budget: 40,000\$. (CoPI with A. Lee Swindlehurst)
- 10/2010 – 10/2011 **Balsells Foundation, University of California Irvine**, “Multicarrier signals for combined communications and positioning. Design and implementations aspects”, Partners: UCI (USA). Budget: 41,000\$. (PI: Gonzalo Seco and A. Lee Swindlehurst)
- 05/2010 – 07/2010 **Indra Espacio**, “Technical support to the test phase of CCC algorithms in EGNOS NLLP ground stations”. Private contract. UAB budget: 25,000€. (PI)
- 01/2010 – 06/2010 **GMV Aerospace and Defence**, “Tracking techniques for high-sensitivity GNSS receivers”. Private contract. UAB budget: 6,000€. (PI)
- 10/2009 – 10/2010 **Balsells Foundation, University of California Irvine**, “Signal design for combined positioning and communication systems”, Partners: UCI (USA). Budget: 34,989\$. (PI: Gonzalo Seco and A. Lee Swindlehurst)
- 09/2009 – 09/2012 **Spanish Ministry of Science and Innovation**, “Infraestructura de investigación para la integración de GNSS con sistemas de comunicación”, Contract no: UNAB08-4E-005. UAB budget: 149,000€. (PI)
- 05/2009 – 07/2009 **Indra Espacio**, “Design of CCC algorithms for EGNOS NLLP ground stations”. Private contract. UAB budget: 34,800€. (PI)
- 01/2009 – 12/2013 **Generalitat de Catalunya**, “SGR Program – Emerging research group on signal processing for communications and navigation”, Contract no: 2009-SGR-298. UAB budget: 41,600€. (PI: Gonzalo Seco)
- 01/2009 – 12/2011 **Spanish Ministry of Science and Innovation**, “LAWCOM – Design of location-aware physical and link layers in cooperative communication systems”, Contract no: TEC2008-06305. UAB budget: 57,233€. (PI: Gonzalo Seco)
- 03/2008 – 02/2012 **Spanish Ministry of Science and Innovation**, “INTEGRA – Investigación en tecnologías para la gestión de la migración”. Partners: Telvent (E), Amper (E), Boeing (E), GMV (E), Integrasys (E), Isdefe (E), Aertec (E), Biometric (E), Ngaro (E), S21sez (E), SHS (E), Vaelsys (E). Private contract. UAB budget: 679,620€. (Co-PI with Gonzalo Seco)
- 09/2007 – 04/2009 **European Space Agency**, “DINGPOS – Signal processing techniques and demonstrator for indoor GNSS positioning”, Contract no: AO/1-5328/06/NL/GLC. Partners: GMV (E), TAS (F), Skysoft (P), Nemerix (CH), ADI (UK). Budget: 79,986€. (PI: Gonzalo Seco)
- 05/2005 – 11/2007 **European Space Agency**, “Development of an adaptive DVB-RCS1 / DVB-RCS2 OBP system for meshed communications”, Partners: TAS (F), SES/Astra (F), Universidad de Cantabria (E), Verisat (N), UPC (E). (PI: Meritxell Lamarca)
- 09/2004 – 03/2006 **Indra Espacio**, “Desarrollo modem frequency hopping (FH) para comunicaciones satélite”, Private contract. (PI: Gregori Vázquez)

05/2004 – 06/2006	Indra Espacio , “Support to the ESA technical proposal for a spread spectrum in-orbit testing system”, Private contract. (PI: Javier Villares)
12/2003 – 05/2004	Indra Espacio , “Estudio y desarrollo de algoritmos de procesamiento de señal en sistemas de comunicaciones DS-CDMA para modulaciones M-PSK”, Private contract. (PI: Gregori Vázquez)
09/2003 – 12/2003	Alcatel Space , “Preliminary study of the autotrack receiver”, Private contract. (PI: Gregori Vázquez)
09/2002 – 12/2003	Alcatel Espacio , “Galileo-Sat”, Private contract. (PI: Jaume Riba)
09/2002 – 04/2003	Alcatel Espacio , “Estudio de técnicas de TTC para transponders digitales”, Private contract. (PI: Gregori Vázquez)
09/2001 – 08/2003	European Commission , “FITNESS – Fourth-generation intelligent transparent networks enhanced through space-time systems”, Contract no: IST-2000-30116. Partners: Lucent (UK), NTUA (G), Motorola (F), Cosmote (G), Fractus (E), Agere (NL), UPC (E). (PI: Meritxell Lamarca)
01/2001 – 08/2003	European Commission , “IBIS – Integrated broadcast interaction system”, Partners: Alcatel Espacio (E), Alcatel Space (F), Hispasat (E), Shiron (IL), Sistemas y Redes de Comunicaciones (E), UPC (E). (PI: Meritxell Lamarca)
01/2001 – 12/2004	Spanish Ministry of Science and Innovation , “TECNAV – Desarrollo de técnicas de procesamiento de señal y observables para la mejora de los sistemas de navegación por satélite”, Contract no: TIC2001-2356-C02-01. (PI: Juan A. Fernández Rubio)
09/2000 – 12/2001	Alcatel Espacio , “DVB Forward – Estudio, diseño y validación de la arquitectura del demodulador del procesador de banda base (BBP) del equipo de difusión de video digital (DVB) del programa DOMINO2”, Private contract. (PI: Jaume Riba)

PATENTS

07/2020	D. Gomez-Casco, G. Seco-Granados, J. A. Lopez-Salcedo, I. Fernandez-Hernandez, "A computer-implemented method for detecting Global Navigation Satellite System signal spoofing, a data processing apparatus, a computer program product, and a computer-readable storage medium", patent number EP20188808, Jul 31 2020.
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FELLOWSHIPS, AWARDS AND HONORS

05/2018	Hispesat Award of the Spanish Association of Telecommunication Engineering (COIT-AEIT) to the Best PhD thesis in satellite services, for the supervised PhD student Daniel Egea.
05/2018	Hispesat Award of the Spanish Association of Telecommunication Engineering (COIT-AEIT) to the Best MsC thesis in satellite services, for the supervised master student Vicente Lucas.
08/2016	Elevated to Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).
04/2016	Erasmus+ Fellowship for a lecturing appointment at Chalmers University.
12/2014	FI-DGR Research Fellowship from Generalitat de Catalunya to fund the PhD thesis of Sergi Locubiche.
03/2013	Accreditation of Research awarded by the Catalan Agency for the Quality of the University System (AQU); required for an associate professorship.
03/2011	BE-DGR Visiting Fellowship from Generalitat de Catalunya for a research stay at the University of Illinois at Urbana-Champaign.
01/2010	FI-DGR Research Fellowship from Generalitat de Catalunya to fund the PhD thesis of Sadiq Ali.
09/2007	Accreditation of Assistant Professor awarded by the National Agency of Evaluation of Quality and Accreditation (ANECA); required for an assistant professorship.
11/2005	Accreditation of Collaborator Professor from the Catalan Agency for the Quality of the University System (AQU); required for a collaboration professorship.
05/2003	IEEE Student Travel Grant awarded by the IEEE Communications Society for the paper “Stochastic approach to square timing estimation with frequency

uncertainty”, presented at the 2003 IEEE ICC conference (acceptance rate 37%).
 06/2002 **FI-DGR Research Fellowship** from Generalitat de Catalunya to pursue the PhD (declined).
 01/2002 **FPI Research Fellowship** from the Spanish Ministry of Science and Innovation to pursue the PhD.
 09/2000 **Research Scholarship** from Alcatel Espacio S.A. to carry out the M.Sc. thesis.

SUPERVISION

PostDoc

06/2018 – Present **Development of the long loop algorithm for NLES EGNOS V3**, Sergi Locubiche-Serra.
 08/2019 – 05/2020 **Signal processing techniques for meta-signals GNSS receivers**, Daniel Egea-Roca
 10/2012 – 10/2013 **Kalman filter-based tracking techniques for GNSS receivers**, Jordi Vilà-Valls.

PhD

04/2021 – Present **Authentication, anti-spoofing and signal integrity techniques for Galileo receivers**, Rafael Terris-Gallego (co-supervised with Prof. Gonzalo Seco-Granados)
 10/2020 – Present **Anti-spoofing techniques for GNSS receivers**, Husnain Shahid (co-supervised with Prof. Gonzalo Seco-Granados).
 10/2019 – Present **Accurate and safe positioning using GNSS and 5G**, Alda Xhafa (co-supervised with Prof. Gonzalo Seco-Granados)
 02/2017 – 09/2019 **Cloud GNSS signal processing for IoT positioning applications**, Vicente Lucas-Sabola. (Not defended)
 02/2015 – 07/2019 **Robust carrier tracking techniques for GNSS receivers affected by ionospheric scintillation**, Sergi Locubiche.
 12/2014 – 11/2018 **Non-coherent acquisition techniques for high-sensitivity GNSS receivers**, David Gómez-Casco (co-supervised with Prof. Gonzalo Seco-Granados).
 02/2013 – 02/2017 **Quickest detection techniques for GNSS signal-level integrity**, Daniel Egea (co-supervised with Prof. Gonzalo Seco-Granados).
 03/2012 – 03/2015 **Anti-spoofing techniques in single-antenna GNSS receivers**, Juan Manuel Parro (discontinued; now at ESA).
 10/2010 – 05/2014 **Evaluation of the LTE positioning capabilities**, José A. Del Peral Rosado (co-supervised with Prof. Gonzalo Seco-Granados).
 01/2009 – 03/2014 **Distributed detection in WSN**, Sadiq Ali (co-supervised w/ Prof. Gonzalo Seco).

MSc

07/2022 **Analysis of compressed sampling and short correlation in snapshot GNSS receivers**, Xavier Canalda, UAB.
 02/2022 **GNSS for IoT: coarse-time positioning**, Guillem Foreman Campins, UAB.
 02/2022 **Direct position estimation for GNSS snapshot receivers**, Lucas Álvarez Navarro, UAB.
 02/2021 **Experimentation with SDR sensors for cloud GNSS signal processing**, Joaquim Gáñez Fernández, UAB.
 02/2020 **Design and implementation of a positioning service in the context of smart cities**, Alejandro Pérez Conesa, UAB.
 07/2017 **Study of SC-FDMA for uplink positioning in V2X**, María Angélica Barreto, UAB.
 01/2017 **End-to-end implementation and demonstration of a Cloud GNSS receiver**, Vicente Lucas Sabola, UAB.
 09/2015 **Adaptive tracking techniques for GNSS receivers**, Sergi Locubiche, UAB.
 09/2014 **Open-loop synchronization for GNSS receivers**, Xavier Moré, UAB.
 09/2013 **Interference detection for GNSS signal-level integrity**, Daniel Egea, UAB.
 09/2012 **Study of spoofing threats on GNSS receivers**, Juan Manuel Parro, UAB.

- 09/2010 **Kalman filter-based tracking for high-sensitivity GNSS receivers**, José A. Del Peral Rosado, UAB.
- 05/2010 **Management system for UAV teams**, Esteban Gutiérrez, EETAC, UPC.
- 09/2008 **Synchronization techniques for OFDM**, Marc Alsinella Fernández, UAB.
- 01/2005 **Acquisition and tracking using an 8 antenna GPS receiver**, Miguel Mañas Barros, ETSETB, UPC.

BSc

- 09/2022 **Array processing techniques for multipath and spoofing mitigation in GNSS handheld receivers**, Lucía Pallarés Rodríguez, UAB.
- 09/2022 **Desarrollo de un front end y adaptación de back end de procesado de datos de sensores GNSS IoT**, Andrés Fraile Parra, UAB.
- 07/2022 **Joint time-delay and angle-of-arrival estimation for single-node uplink positioning using 5G SRS**, Néstor Campos Gestal, UAB.
- 07/2022 **Desarrollo de un servicio de asistencia basado en NTRIP para receptores snapshot de GNSS**, Flavio C. Jiménez Marco, UAB.
- 07/2020 **LTE positioning using RSS and TDOA techniques**, Lucas Álvarez Navarro, UAB.
- 07/2020 **Development of software tools for the analysis of scintillation data from the ESA MONITOR network**, Diego Fraile Parra, UAB.
- 07/2020 **RSS and RSSD techniques for jammer localization**, Lorena Tortajada, UAB.
- 07/2020 **Coarse-time positioning algorithm**, Oriol Pons Pons, UAB.
- 07/2020 **Simulation of multipath mitigation techniques for GNSS**, Irene Gutiérrez, UAB.
- 07/2019 **Collaborative algorithms for position and velocity estimation of a source of interference**, Arnau Ochoa Bañuelos, UAB.
- 07/2018 **GUI for the analysis of indoor/outdoor GNSS signals**, Nicolás Aristimuño, UAB.
- 07/2018 **Front-end development and multi-constellation extension for a cloud GNSS receiver**, Alejandro Pérez-Conesa, UAB.
- 07/2017 **IoT sensor for Cloud GNSS signal processing**, Luis M. Romero, UAB.
- 07/2016 **Galileo in-orbit testing**, Antonio Tripiana, UAB.
- 07/2015 **Development of a cloud GNSS receiver**, Vicente Lucas, UAB.
- 09/2012 **Interference detection in GNSS**, David Manzano, UAB.
- 09/2012 **Timing synchronization in LTE**, David Gómez, UAB.
- 09/2011 **Nonlinear GNSS signal detection**, Pau Buch, UAB.
- 07/2011 **Signal detection based on extreme value theory**, Gabriel Casado, UAB.
- 09/2009 **Signal processing techniques for eolic map generation**, Carme Martínez, UAB.
- 06/2009 **Web representation of positioning data**, Ana Sierra, UAB.
- 06/2009 **Experimentation with a software GNSS receiver in harsh environments**, Juan Manuel Parro, UAB.
- 02/2009 **Noncoherent correlations in GNSS receivers**, Alejandro Girbes, UAB.
- 02/2008 **Software demodulator for digital receivers in railroad environments**, Alfonso Escoda and Jonathan Gabaldón, UAB.
- 02/2008 **Cooperative synchronization in sensor networks**, Diego Gálvez, UAB.
- 09/2007 **Positioning and handover techniques for DVB-H**, Xavier Saura, UAB.
- 09/2007 **Single-bit digital receivers for UWB systems**, Lluís Garcia, UAB.

TEACHING

MSc in Telecommunication Engineering

- 2009 – Present **Statistical signal processing**, Fall, MSc in Telecommunication Engineering, UAB.
- 2009 – 2011 **Space systems engineering**, Fall, MSc in Design of Telecom. Systems, UAB.
- 2009 – 2012 **Large scale networks: bio-inspired and distributed techniques**, Fall, MSc in Design of Telecommunication Systems, UAB.

MSc in Aerospace Science and Technology

- 2007 – 2009 **Satellite communication principles**, Spring, MSc in Aerospace Science and

Technology, EETAC, UPC.

BSc in Telecommunication Systems

2014 – Present **Digital signal processing**, 3rd year course, Fall, BSc Telecommunication Engineering, UAB.

Telecommunication engineering (non-EHEA degree)

2007 – 2013 **Digital signal processing**, 4th year course, Fall semester, UAB.

2007 – 2014 **Design of advanced digital receivers**, 5th year course, Spring semester, UAB.

2006 – 2008 **Satellite communications and navigation**, 5th year course, Fall semester, UAB.

2005 – 2007 **Wireless communications**, 5th year course, Fall semester, UAB.

2006 – 2013 **Analog communications**, 2nd year course, Fall semester, UAB.

2006 – 2010 **Digital communications**, 2nd year course, Spring semester, UAB.

2004 – 2005 **Communications I**, 3rd year course, Spring semester, ETSETB, UPC.

PHD EVALUATION COMMITTEES

10/2021 Francesc Molina Oliveras, "Allocation designs for massive multiple access with interference cancellation", UPC. (Substitute panel member)

02/2020 José Antonio García Molina, "GNSS signal processing and spatial diversity exploitation", UPC. (Substitute panel member)

03/2019 Alessio Fascista, "Cooperative positioning based on array processing and information fusion", Università del Salento. (Pre-examiner)

12/2018 Tan Do-Duy, "Design of network coding functionality for 5G networks", Universitat Autònoma de Barcelona. (Panel member)

11/2018 Gabriel E. García, "On the trade-off between uncertainty and delay in UWB and 5G localization", Chalmers University of Technology. (Opponent)

09/2017 Juha Ala-Luhtala, "Some Approximate Bayesian Inference Methods for Stochastic State Space Models", Tampere University of Technology. (Pre-examiner)

04/2017 René Játiva, "Dispersive source models in wireless communications subscriber location", UPC. (Substitute panel member)

03/2017 Juan Manuel Castro Arvizu, "Robust indoor positioning in WLAN networks", UPC. (Substitute panel member)

01/2016 Francisco Ramírez, "Graph-based techniques for compression and reconstruction of sparse sources", UPC. (Substitute panel member)

01/2016 Adrià Rovira, "Consolidation and assessment of a technique to provide Fast and Precise Point Positioning (Fast-PPP)", UPC. (Substitute panel member)

04/2015 Baharak Soltanian, "Signal processing algorithms for FFT-based GNSS receivers", Tampere University of Technology. (Pre-examiner)

07/2014 Josep Font-Segura, "Wideband cognitive radio: monitoring, detection and sparse noise subspace communication", UPC. (Substitute panel member)

10/2012 Joan Enric Barceló, "Communications in Wireless Sensor Networks: Compression, Energy Efficiency and Security", UAB. (Substitute panel member)

09/2011 Ingmar Groh, "Efficient time-variant synchronization in spread-spectrum navigation receivers", Universidad Miguel Hernández. (Panel member)

06/2009 Pau Closas, "Bayesian signal processing techniques for GNSS receivers: from multipath mitigation to positioning", UPC. (Substitute panel member)

09/2008 Antoni Morell, "A convex decomposition perspective on dynamic bandwidth allocation and applications", UPC. (Substitute panel member).

04/2008 Ali Nassar, "Time-varying frequency selective MIMO channel estimation", UPC. (Panel member)

INVITED TALKS

T13. (Spain) "Satellite navigation activities at UAB: achievements and prospects", Barcelona Chamber of Commerce, 14/07/2021.

T12. (Spain) "LEO satellites for positioning, navigation and timing (PNT)", IEEC Forum, 09/06/2021.

T11. (Spain)	"GNSS positioning in the cloud for IoT", Casa SEAT, 20/03/2021.
T10. (Korea)	"LTE positioning and the way forward to 5G", KAIST, 15/11/2018.
T9. (Korea)	"Research activities on GNSS signal processing", ETRI, 11/12/2015.
T8. (Korea)	"Quickest detection for signal-level integrity", Hanyang University, 08/12/2015.
T7. (Finland)	"Interference issues in GNSS", Doctoral program in Information Science and Engineering, GETA/TISE Summer School, 27/08/2013.
T6. (Finland)	"LTE positioning principles – advanced topics", Doctoral program in Information Science and Engineering, GETA/TISE Summer School, 28/08/2013.
T5. (Finland)	"LTE positioning principles – basics", Doctoral program in Information Science and Engineering, GETA/TISE Summer School, 28/08/2013.
T4. (Spain)	"Overview of error sources in harsh environments and alternative positioning methods", ESA course on Propagation effects, channel models and related errors on GNSS, ESAC, Madrid, 16/10/2012.
T3. (USA)	"A premier on synchronization for digital receivers", Coordinated Science Laboratory (CSL), University of Illinois at Urbana-Champaign, 27/07/2011.
T2. (USA)	"Maximum likelihood synchronization techniques for single- and multi-carrier communications", EECS Department, University of California Irvine, 02/03/2010.
T1. (Spain)	"Tecnologías para la vigilancia, monitorización y alerta", Workshop del Instituto de Navegación de España, Institut Cartogràfic de Catalunya (ICC), 22/05/2009.

PROFESSIONAL ACTIVITIES

2020 – 2022	Member of the Editorial Committee of the Korean Institute of Positioning, Navigation and Timing (IPNT).
2019 – Present	Secretary and Treasurer of the IEEE AESS Spain Section Chapter.
Associate Editor	
2018	IEEE Access, special section on "GNSS, localization and navigation technologies".
General co-chair	
2016	Intl. Conference on Localization and GNSS (ICL-GNSS), Barcelona, Spain.
Publications chair	
2015	Intl. Conference on Localization and GNSS (ICL-GNSS), Göteborg, Sweden.
Technical Program Committee (TPC) co-chair	
2014	Intl. Conference on Localization and GNSS (ICL-GNSS), Helsinki, Finland.
Technical Program Committee (TPC) member	
2021	IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, (PIMRC), Helsinki, Finland.
2021	IEEE Vehicular Technology Conference (VTC) Spring, Helsinki, Finland.
2017	IEEE Wireless Communications and Networking (WCNC), Barcelona, Spain.
2015	IEEE Globecom, Track on signal processing for communications, San Diego, USA.
2015	European Signal Processing Conference (EUSIPCO), Nice, France.
2015	IEEE International Conference on Communications (ICC), London, UK.
2015	Intl. Symp. on Wireless Communication Systems (ISWCS), Brussels, Belgium.
2015	Intl. Symp. on Wireless Communication Systems (ISWCS), Brussels, Belgium.
2011	European Signal Processing Conference (EUSIPCO), Barcelona, Spain.
2009	IEEE Vehicular Technology Conference (VTC), Barcelona, Spain.
Reviewer for Journals	
_ EURASIP Signal Processing Journal	
_ IEEE Transactions on Communications	
_ IEEE Transactions on Signal Processing	
_ IEEE Transactions on Wireless Communications	
_ IEEE Transactions on Vehicular Technology	
_ IEEE Transactions on Circuits and Systems I	
_ IEEE Transactions on Information Theory	

- _ IEEE Communications Letters
- _ IEEE Signal Processing Letters
- _ IEE Proceedings on Science, Measurement and Technology
- _ International Journal of Navigation and Observation
- _ Hindawi Journal on Advances in Electrical Engineering
- _ Hindawi Advances in Electrical Engineering
- _ MDPI Sensors
- _ Signal Processing (Elsevier)
- _ Springer Journal of Zhejiang University Science C (Computers & Electronics)
- _ Transactions on Emerging Technologies (Wiley)

Reviewer for Conferences

- _ European Signal Processing Conference (EUSIPCO)
- _ IEEE Consumer Communications and Networking Conference (CCNC)
- _ IEEE GlobeCom
- _ IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- _ IEEE International Conference on Communication Systems (ICCS)
- _ IEEE International Conference on Ultrawideband (ICUWB)
- _ IEEE Sensor Array Multichannel Signal Processing Workshop (SAM)
- _ IEEE Statistical Signal Processing Workshop (SSP)
- _ IEEE Vehicular Technology Conference (VTC)
- _ IEEE Wireless Communications and Networking Conference (WCNC)
- _ International Conference on Localization and GNSS (ICL-GNSS)
- _ International Workshop on Satellite and Space Communications (IWSSC)

Evaluator of Project Proposals

- _ Ministry of Higher Education, Andorra (Call 2019).
- _ JSC National Centre of Science and Technology Evaluation, Kazakhstan (Calls 2017, 2018, 2019).
- _ Spanish Ministry of Economy, ANEP – Agencia Nacional de Evaluación y Prospectiva (Call 2014).
- _ Xunta de Galicia, Department of Innovation and Industry, General research program (Call 2007, 2010).

Membership

- _ Member of the Institute of Electrical and Electronics Engineers since 1997.
- _ Member of the IEEE Aerospace and Electronic Systems Society.
- _ Member of the IEEE Communications Society.
- _ Member of the IEEE Signal Processing Society.
- _ Member of the Spanish Association of Telecommunication Engineers (COIT/AEIT).

Volunteering

- _ Affiliate member of IEEE Signal Processing Theory and Methods Technical Committee (2016 – present).
- _ Secretary of the Barcelona IEEE Student Branch (06/1998 – 08/2000).
- _ Member of the Editorial Board of the IEEE Buran journal (06/1998 – 08/2000).

PUBLICATIONS

Peer-reviewed Journals

- J44.** D. Egea-Roca, M. Arizabaleta, T. Pany, F. Antreich, **J. A. Lopez-Salcedo**, M. Paonni, G. Seco-Granados, "GNSS User Technology: State of the Art and Future Trends", *IEEE Access*, vol. 10, pp. 39939 - 39968, Apr. 2022.
- J43.** D. Egea-Roca, B. K. Guepie, **J. A. Lopez-Salcedo**, G. Seco-Granados, I. V. Nikiforov, "Two Strategies in Transient Change Detection", *IEEE Transactions on Signal Processing*, vol. 70, pp. 1418-1433, Feb. 2022.
- J42.** A. Xhafa, J. A. del Peral-Rosado, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Evaluation of 5G positioning performance based on UTD_oA, AoA and base-station selective exclusion", *Sensors*, vol. 22, num. 101, 14 pages, Dec 24 2021
- J41.** S. Locubiche, G. Seco-Granados, **J. A. Lopez-Salcedo**, "Performance Assessment of a Low-Complexity Autoregressive Kalman Filter for GNSS Carrier Tracking Using Real Scintillation Time

Series", *GPS Solutions*, vol. 26, no. 17, pp. 1-14, Nov. 2021.

- J40.** Ning Chang, Wenjie Wang, Xi Hong, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Joint Angle and Delay Estimation for GNSS Multipath Signals Based on Multiple Sparse Bayesian Learning", *GPS Solutions*, vol. 25, num. 64, 14 pages, Feb 22 2021
- J39.** G. Seco-Granados, D. Gomez-Casco, **J. A. Lopez-Salcedo**, I. Fernandez-Hernandez, "Detection of Replay Attacks to GNSS based on Partial Correlations and Authentication Data Unpredictability", *GPS Solutions*, vol. 25, pp. 1-15, Jan. 2021.
- J38.** A. Minetto, F. Dovis, A. Vesco, M. Garcia-Fernandez, A. Lopez-Cruces, J. L. Trigo, A. Perez-Conesa, J. Ganez-Fernandez, G. Seco-Granados, **J. A. Lopez-Salcedo**, "A testbed for GNSS-based Positioning and Navigation Technologies in Smart Cities: The HANSEL Project", *Smart Cities*, vol. 3, no. 4, pp- 1219-1241, Oct. 2020.
- J37.** D. Gomez-Casco, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Optimal Post-Detection Integration Techniques for the Reacquisition of Weak GNSS Signals", *IEEE Trans. on Aerospace and Electronic Systems*, vol. 56, no. 3, June 2020, (Q1@JCR, IF 3.672 @ 2019).
- J36.** S. Locubiche, G. Seco-Granados, **J. A. Lopez-Salcedo**, "Asymptotic Analysis on the Convergence Time of Autoregressive Kalman Filters", *IEEE Signal Processing Letters*, vol. 27, pp. 820-824, May 07 2020. (Q2@JCR, IF 3.105 @ 2019).
- J35.** J. A. del Peral-Rosado, G. Seco-Granados, S. Kim, **J. A. Lopez-Salcedo**, "Network Design for Accurate Vehicle Localization", *IEEE Transactions on Vehicular Technology*, vol. 68, no. 5, pp. 4316-4327, May 2019, (Q1@JCR, IF 5.379).
- J34.** D. Egea-Roca, A. Tripiana-Caballero, **J. A. Lopez-Salcedo**, G. Seco-Granados, W. de Wilde, B. Bougard, J.-M. Sleewaegen, A. Popugae, "Design, Implementation and Validation of a GNSS Measurement Exclusion and Weighting Function with a Dual Polarized Antenna", *Sensors*, pp. 1-23, vol. 18, no. 4483, 2018, (Q1@JCR, IF 3.031).
- J33.** S. Locubiche, G. Seco-Granados, **J. A. Lopez-Salcedo**, "Closed-Form Approximation for the Convergence Time of pth-order Kalman Filters", *IEEE Signal Processing Letters*, vol. 25, no. 10, pp. 1505-1509, Oct 2018, (Q1@SJR, IF 3.268).
- J32.** D. Gomez-Casco, **J. A. Lopez-Salcedo**, G. Seco-Granados, "C/N0 Estimators for High-Sensitivity Snapshot GNSS receivers", *GPS Solutions*, vol. 22, 11 pages, Sep 19 2018, (Q1@SJR, IF 3.049).
- J31.** J. A. del Peral-Rosado, Jani Saloranta, Giuseppe Destino, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Methodology for Simulating 5G and GNSS High-Accuracy Positioning", *Sensors*, vol. 18, no.10, 25 pages, Sep 2018, (Q1@JCR, IF 3.031).
- J30.** D. Egea-Roca, G. Seco-Granados, **J. A. Lopez-Salcedo**, "Inhomogeneous Quadratic Tests in Transient Signal Detection: Closed-Form Upper Bounds and Application in GNSS", *Digital Signal Processing*, vol. 78, pp. 20-29, Jul 2018, Feb 2018 (Q2@JCR, IF 2.34).
- J29.** V. Lucas-Sabola, G. Seco-Granados, **J. A. Lopez-Salcedo**, J. A. Garcia-Molina, "GNSS IoT Positioning. From Conventional Sensors to a Cloud-Based Solution", *Inside GNSS*, vol. May/June, pp. 53-62, May 2018.
- J28.** J. A. del Peral-Rosado, R. Raulefs, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Survey of Cellular Mobile Radio Localization Methods: from 1G to 5G", *IEEE Communications Surveys and Tutorials* ([top #1 journal in the category of "Telecommunications"](#)), vol. 20, no. 2, pp. 1124-1148, Apr 2018 (Q1@JCR, IF 17.18).
- J27.** J. A. del Peral-Rosado, **J. A. Lopez-Salcedo**, F. Zanier, G. Seco-Granados, "Position Accuracy of Joint Time-Delay and Channel Estimators in LTE Networks", *IEEE Access*, vol. 6, pp. 25185-25199, Apr 2018 (Q1@JCR, IF 3.24).
- J26.** D. Egea-Roca, J. A. Lopez-Salcedo, G. Seco-Granados, H. V. Poor, "Performance Bounds for Finite Moving Average Tests in Transient Change Detection", *IEEE Transactions on Signal Processing*, vol. 66, no. 6, pp. 1594-1606, Mar 2018 (Q1@JCR, IF 4.30).
- J25.** S. Locubiche, G. Seco-Granados, **J. A. Lopez-Salcedo**, "Closed-Form Approximation for the Steady-State Performance of Second-Order Kalman Filters", *IEEE Signal Processing Letters*, vol. 25, no. 2, pp. 268-272, Feb 2018 (Q1@SJR, IF 2.53).
- J24.** E. S. Lohan, P. Ritcher, V. Lucas-Sabola, **J. A. Lopez-Salcedo**, G. Seco-Granados, H. Leppakoski, S. Serna-Santiago, "Location Privacy Challenges and Solutions. Part 2: Hybrid and Non-GNSS Localization", *Inside GNSS*, pp. 56-64, Nov 2017.
- J23.** E. S. Lohan, P. Richter, V. Lucas-Sabola, **J. A. Lopez-Salcedo**, G. Seco-Granados, H. Leppakoski, E. Serna-Santiago, "Location Privacy Challenges and Solutions. Part 1: GNSS localization", *Inside GNSS*, pp. 73-81, September/October 2, Sep 2017.

- J22.** E. S. Lohan, D. Alonso de Diego, **J. A. López-Salcedo**, G. Seco-Granados, P. Boto, P. Fernandes, "Unambiguous Techniques in Modernized GNSS Signals", *IEEE Signal Processing Magazine* ([top #1 journal in the field of "Signal Processing"](#)), vol. 34, no. 5, pp. 38-52, Sept 2017 (Q1@JCR, IF 9.65).
- J21.** D. Egea, G. Seco-Granados, **J. A. López-Salcedo**, "Comprehensive Overview of Quickest Detection Theory and its Application to GNSS Threat Detection", *Gyroscopy and Navigation*, vol. 8, no. 1, pp. 1-14, January 2017.
- J20.** N. Ferrara, M. Pasnikowski, S. Sanchez-Naranjo, F. Gonzalez, R. Ramos-Pollan, G. Seco-Granados, **J. A. López-Salcedo**, D. Egea-Roca, M. Sole, M. Toledo, E. Lohan, "Combined Architecture Enhancing Multi-Dimensional Signal Quality in GNSS Receivers", *Inside GNSS*, April/May, pp. 54-62, Apr 01 2016.
- J19.** J. Vilà-Valls, P. Closas, C. Fernández, **J. A. López-Salcedo**, G. Seco-Granados, "Adaptive GNSS carrier tracking under ionospheric scintillation: estimation vs mitigation", *IEEE Communications Letters*, vol. 19, no. 6, pp. 961-964, Jun 2015 (Q1@SJR, IF 1.29).
- J18.** F. Jiang, J. Chen, A. L. Swindlehurst, **J. A. López-Salcedo**, "Massive MIMO for Wireless Sensing with a Coherent Multiple Access Channel", *IEEE Transactions on Signal Processing*, vol. 63, no. 12, pp. 3005-3017, Jun 2015 (Q1@JCR, IF 2.62).
- J17.** A. Gasull, **J. A. López-Salcedo**, F. Utzet, "Maxima of Gamma Random Variables and Other Weibull-Like Distributions and the Lambert W Function", *Test*, vol. 24, no. 4, pp. 714-733, Mar 01 2015 (Q1@SJR, IF 1.207).
- J16.** S. Ali, M. Jansson, G. Seco-Granados, J. A. López-Salcedo, "Kronecker-based Fusion Rule for Cooperative Spectrum Sensing with Multi-Antenna Receivers", *Electronics*, vol 3(4), pp. 675-688, Dec 10 2014 (Q2@SJR, IF 0.315).
- J15.** S. Ali, D. Ramirez, M. Jansson, G. Seco-Granados, **J. A. López-Salcedo**, "Multi-antenna Spectrum Sensing by Exploiting Spatio-temporal Correlation", *EURASIP Journal on Advances in Signal Processing*, Oct 25 2014 (Q2@SJR, IF 0.77).
- J14.** E. Gutiérrez, **J. A. López-Salcedo**, G. Seco-Granados, "Systematic Design of Transmitter and Receiver Architectures for Flexible Filter Bank Multi-Carrier Signals", *EURASIP Journal on Advances in Signal Processing*, vol. 103, pp. 1-26, Jul 2014 (Q2@SJR, IF 0.77).
- J13.** E. S. Lohan, J. Lunden, G. Seco-Granados, **J. A. López-Salcedo**, V. Koivunen, "Cyclic Frequencies of GNSS Signals and their Potential within a Cognitive Positioning Framework", *ION Navigation Journal*, vol. 61, Issue 2, pp. 95-114, Jun 2014 (Q2@JCR, IF 0.56).
- J12.** J. A. Del Peral-Rosado, **J. A. López-Salcedo**, G. Seco-Granados, F. Zanier, M. Crisci, "Joint Maximum Likelihood Time-Delay Estimation for LTE Positioning in Multipath Channels", *EURASIP Journal on Advances in Signal Processing*, vol. 2014:33, 13 pages, Feb 28 2014 (Q2@SJR, IF 0.77).
- J11.** **J. A. López-Salcedo**, J. A. Del Peral-Rosado, G. Seco-Granados, "Survey on Robust Carrier Tracking Techniques", *IEEE Communications Surveys and Tutorials* ([top #1 journal in the category of "Telecommunications"](#)), vol. 16, no. 2, pp. 670-688, second quarter 2014 (Q1@JCR, IF 6.80).
- J10.** S. Ali, G. Seco-Granados, **J. A. López-Salcedo**, "Spectrum Sensing with Spatial Signatures in the Presence of Noise Uncertainty and Shadowing", *EURASIP Journal on Wireless Communications and Networking*, vol. 2013:150, pp. 1-16, 2013 (Q2@SJR, IF 0.80).
- J9.** **J. A. López-Salcedo**, E. Gutiérrez, G. Seco-Granados, A. L. Swindlehurst, "Unified Framework for the Synchronization of Flexible Multicarrier Communication Signals", *IEEE Trans. on Signal Processing*, vol. 61, no. 4, pp. 828-842, Feb 2013 (Q1@JCR, IF 3.19).
- J8.** G. Seco-Granados, **J. A. López-Salcedo**, D. Jiménez-Baños, G. López-Risueño, "Challenges in Indoor Global Navigation Satellite Systems", *IEEE Signal Processing Magazine* ([top #1 journal in the field of "Signal Processing"](#)), vol. 29, no. 2, pp. 108-131, Mar 2012 (Q1@JCR, IF 3.36).
- J7.** J. L. Vicario, A. Bel, **J. A. López-Salcedo**, G. Seco-Granados, "Opportunistic Relay Selection with Outdated CSI: Outage Probability and Diversity Analysis", *IEEE Trans. on Wireless Communications*, Vol. 8, No. 6, pp. 2872-2876, Jun 2009, (Q1@JCR, IF 1.90).
- J6.** **J. A. López-Salcedo**, "Simple Closed-Form Approximation to Ricean Sum Distributions", *IEEE Signal Processing Letters*, vol. 16, no. 3, pp.153-155, Mar 2009 (Q1@SJR, IF 1.17).
- J5.** **J. A. López-Salcedo**, G. Vázquez, "Detection of PPM-UWB Random Signals", *IEEE Trans. on Signal Processing*, vol. 56, no.5, pp. 2003-2016, May 2008 (Q1@JCR, IF 2.33).
- J4.** **J. A. López-Salcedo**, G. Vázquez, "NDA Waveform Estimation in the Low-SNR Regime", *IEEE Trans. on Signal Processing*, vol. 55, no. 12, pp. 5864-5868, Dec 2007 (Q1@JCR, IF 1.64).
- J3.** **J. A. López-Salcedo**, G. Vázquez, "Waveform-Independent Frame Timing Acquisition for UWB Signals", *IEEE Trans. on Signal Processing*, vol. 55, pp. 279-289, Jan 2007 (Q1@JCR, IF 1.64).
- J2.** **J. A. López-Salcedo**, G. Vázquez, "Asymptotic Equivalence Between the Unconditional Maximum-

Likelihood and the Square-Law Nonlinearity Symbol Timing Estimation", *IEEE Trans. on Signal Processing*, vol. 54, pp. 244-257, Jan 2006 (Q1@JCR, IF 1.57).

J1. J. A. López-Salcedo, D. Prado Rodríguez, R. Tornay, A. Urruela Planas, "Algoritmo de Scheduling M-LWDF. Simulación para la Provisión de Calidad de Servicio en Entornos Multiusuario con Canales Variantes", *IEEE Buran*, 18, pp. 20-31, Apr 2002.

Peer-reviewed Conferences

C115. A. Sfeir, A. Zaidi, M. Sole-Gaset, M. A. Suarez-Gopar, D. Lazaro-Leiva, J. Clua-Lara, S. Locubiche, J. A. Lopez-Salcedo, G. Seco-Granados, C. Boulanger, P. Claes, "EGNOS V3 Demonstration of SBAS Signal Transmission with Increased Strength and Robustness Performances", *Proc. ION GNSS+*, Sep 22 2022.

C114. R. Terris-Gallego, I. Fernandez-Hernandez, J. A. Lopez-Salcedo, G. Seco-Granados, "Assisted Commercial Authentication Service Performance Evaluation", *Proc. ION GNSS+*, Sep 22 2022.

C113. S. Locubiche, A. Perez-Conesa, D. Fraile-Parra, G. Seco-Granados, J. A. Lopez-Salcedo, J. M. Parro-Jimenez, R. Orus-Perez, "MONITORtoolbox – Software Tool for the Analysis of Ionospheric Scintillation Data from the ESA Monitor Network", *Proc. ION GNSS+*, Sep 21 2022.

C112. P. Boto, P. Fernandez, V. Mendonca, D. Egea-Roca, G. Seco-Granados, J. A. Lopez-Salcedo, "High Accuracy Code Tracking Exploiting Meta-signals Processing Strategies", *Proc. ION GNSS+*, Sep 21 2022.

C111. R. Terris-Gallego, I. Fernandez-Hernandez, J. A. Lopez-Salcedo, G. Seco-Granados, "Guidelines for Galileo Assisted Commercial Authentication Service Implementation", *Proc. ICL-GNSS*, Jun 07 2022.

C110. D. Egea-Roca, J. A. Lopez-Salcedo, G. Seco-Granados, E. Falletti, "Performance Analysis of a Multi-Slope Chirp Spread Spectrum Signal for PNT in a LEO Constellation", *ESA Workshop on Satellite Navigation User Equipment Technologies (NAVITEC)*, Apr 07 2022.

C109. F. Fabra, G. Seco-Granados, J. A. Lopez-Salcedo, E. Obiols, A. Creus, A. Gonzalez-Novell, "Detection, Characterization, and Localization of Interference Signals in Wideband GNSS Environments: the GIMAD System", *ESA Workshop on Satellite Navigation User Equipment Technologies (NAVITEC)*, Apr 07 2022.

C108. O. Renaudin, I. Lapin, F. Zanier, J. A. Lopez-Salcedo, G. Seco-Granados, "TOA Error Bounds for Positioning in 5G New Radio Networks", *Proc. ION GNSS+*, Sep 23 2021.

C107. D. Egea-Roca, E. Falletti, J. A. Lopez-Salcedo, G. Seco-Granados, "Comparison of Several Signal Designs based on Chirp Spread Spectrum (CSS) Modulation for a LEO PNT System", *Proc. ION GNSS+*, Sep 23 2021.

C106. S. Locubiche, M. Sole-Gaset, M. Romero-Gaviria, N. Zaidi, A. Sfeir, G. Seco-Granados, J. A. Lopez-Salcedo, "Architecture and Performance of the Long Loop Algorithm for EGNOS V3 NLES Stations", *Proc. ION GNSS+*, Sep 22 2021.

C105. S. Locubiche, G. Seco-Granados, J. A. Lopez-Salcedo, "Performance Limits and Benefits of Adaptive Autoregressive Kalman Filters for GNSS Scintillation-Robust Carrier Tracking", *Proc. International Conference on Localization and GNSS (ICL-GNSS)*, Jun 01 2021.

C104. A. Xhafa, J. A. del Peral-Rosado, G. Seco-Granados, J. A. Lopez-Salcedo, "Performance of NLOS Base Station Exclusion in cmWave 5G Positioning", *Proc. IEEE Vehicular Technology Conference (VTC) Spring*, Apr 25 2021.

C103. J. Ganez-Fernandez, A. Perez-Conesa, G. Seco-Granados, J. A. Lopez-Salcedo, "Sensor de RF de Bajo Coste para el Procesado Remoto de Senales GNSS", *Proc. Seminario Anual de Automática, Electrónica Industrial e Instrumentación (SAAEI)*, Jul 08 2020, [\[link\]](#).

C102. D. Egea-Roca, J. A. Lopez-Salcedo, G. Seco-Granados, W. De Wilde, "Generalized ANOVA Test for GNSS Spoofing Detection with a Dual-Polarized Antenna", *Proc. European Signal Processing Conference (EUSIPCO)*, Jun 24 2020.

C101. J. A. del Peral-Rosado, F. Gunnarsson, S. Dwivedi, S. Modarres, O. Renaudin, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Exploitation of 3D city maps for hybrid 5G RTT and GNSS positioning simulations", *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, May 05 2020, [\[link\]](#).

C100. N. Chang, G. Seco-Granados, **J. A. Lopez-Salcedo**, W. Wang, X. Hong, "Joint Angle and Delay Estimation for GNSS Multipath Signals Based on Multiple Sparse Bayesian Learning", *Proc. IEEE/ION PLANS*, Apr 23 2020, [\[link\]](#).

- C99.** D. Ibañez, A. Rovira, J. Sanz, J. M. Juan, G. Gonzalez, M. T. Alonso, **J. A. Lopez-Salcedo**, H. Jia, F. J. Pancorbo, C. Garcia, I. Martin, S. R. Abadia, M. Lopez, "A Kinematic Campaign to Evaluate EGNOS 1046 Maritime Service", *Proc. ION GNSS+*, Sep 2019.
- C98.** G. Cueto-Felgueroso, F. Grec, J. A. del Peral-Rosado, **J. A. Lopez-Salcedo**, G. Seco-Granados, C. Gentner, E. Staudinger, D. Bartlett, E. Serna, M. Azaola, A. Fernandez, F. Blazquez, F. Mata, R. Prieto-Cerdeira, L. Ries, "Hybridizing GNSS with Sensors and Terrestrial Technologies for Positioning in 5G", *Proc. ION GNSS+*, Sep 2019.
- C97.** J. A. del Peral-Rosado, O. Renaudin, C. Gentner, R. Raulefs, E. Dominguez, A. Fernandez, F. Blazquez, G. Cueto, A. Chassaigne, D. Bartlett, F. Grec, L. Ries, R. Prieto, **J. A. Lopez-Salcedo**, G. Seco-Granados, "Physical-Layer Abstraction for Hybrid GNSS and 5G Positioning Evaluations", *Proc. IEEE VTC Fall*, Sep 2019, [\[link\]](#).
- C96.** F. J. Alvarez-Franco, J. A. Lopez-Salcedo, "Calculo de la posicion GPS a partir de medidas en crudo de dispositivos Android en las bandas L1 y L5", *Proc. Seminario Anual de Automatica, Electronica Industrial e Instrumentacion (SAAEI)*, Jul 2019.
- C95.** V. Lucas-Sabola, **J. A. Lopez-Salcedo**, G. Seco-Granados, J. A. Garcia-Molina, "Performance Analysis of Low-Power GNSS Positioning in IoT", *Proc. 9th ESA Workshop on Satellite Navigation User Equipment Technologies (NAVITEC)*, Dec. 2018.
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