

## Part A. PERSONAL INFORMATION

CV date 2019-05-27

|                                      |                      |     |                     |
|--------------------------------------|----------------------|-----|---------------------|
| First and Family name                | Igor Fernández Pérez |     |                     |
| Social Security, Passport, ID number | 78.873.228-H         | Age | 42                  |
| Researcher numbers                   | Researcher ID        |     |                     |
|                                      | Orcid code           |     | 0000-0002-9312-5886 |

### A.1. Current position

|                                |                                                                                                                            |        |                                                                    |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------|
| Name of University/Institution | University of the Basque Country (UPV/EHU)<br>Faculty of Engineering in Bilbao                                             |        |                                                                    |
| Department                     | Communications Engineering                                                                                                 |        |                                                                    |
| Address and Country            | Pz- Torres Quevedo 1, Bilbao, ES-48013 Spain                                                                               |        |                                                                    |
| Phone number                   | 946013918                                                                                                                  | E-mail | <a href="mailto:igor.fernandez@ehu.eus">igor.fernandez@ehu.eus</a> |
| Current position               | Associate Professor                                                                                                        | From   | December/ 2011                                                     |
| UNESCO code spec.              | 332505                                                                                                                     |        |                                                                    |
| Keywords                       | Telecommunications, Radiocommunications, Propagation, Digital Radio and Television, Smart Grids, Power Line Communications |        |                                                                    |

### A.2. Education

|                             | University | Year |
|-----------------------------|------------|------|
| Telecommunications engineer | UPV/EHU    | 2001 |
| PhD in Information Theory   | UPV/EHU    | 2011 |

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

JCR articles: 8.

H Index: 4.

Sexenios: 1 six-year research terms (sexenios), recognized by CNEAI (last one: 01/01/2012).

## Part B. CV SUMMARY

Igor Fernandez (IEEE Member) received the M.S. and PhD in Telecommunication Engineering at the University of the Basque Country (Spain) in 2001 and 2011 respectively. In 2003, he joined the TSR (Radiocommunications and Signal Processing) research group of the University of the Basque Country, where he is currently an assistant professor.

His current research interests focus on new digital broadcasting technologies and on the analysis of the Power Line Communications in the Smart Grids and the effects of different types of interferences and disturbances on the quality of the transmitted signal.

Igor Fernandez is co-author of several international peer reviewed journals (IEEE Transactions on Broadcasting, IEEE Antennas and Propagation Letters, IET Electronics Letters, International Journal on Electrical Power and Energy Systems and Energies), one book and a wide list of international conferences. Results have also been part of contributions to Recommendations, reports, handbooks and internal documents of regulatory and standardization bodies (ITU, CEPT, CIGRÉ/CIREC and CENELEC).

## Part C. RELEVANT MERITS

### C.1. Publications (including books)

#### 1 book:

- **Handbook on Ground Wave.** I. Angulo, L. Barclay, Y. Chernov, N. DeMinco, I. Fernández, U. Gil, D. Guerra, J. Milsom, I. Peña y D. de la Vega. International Telecommunication Union (ITU) Publications. 2014. *Published in 6 languages*. ISBN 978-92-61-14641-2.

#### 10 JCR articles:

- **'Medium wave DRM field test results in urban and rural environments'**. Guerra, D.; Prieto, G.; Fernandez, I.; Matias, J.M.; Angueira, P.; Ordiales, J.L. IEEE Transactions on Broadcasting, vol. 51, issue 4, pp. 431-438, DOI: 10.1109/TBC.2005.852250, 2005. ISSN: 0018-9316. JCR (2005): 1,213. Cat.: Telecommunications (14/59). Q1.
- **'Indoor noise measurements in medium wave band'**. Fernandez, I.; Angueira, P.; Landa, I.; Arrinda, A.; Guerra, D.; Gil, U. Electronics letters, vol. 46, issue 1, pp. 1162-1163, DOI: 10.1049/el.2010.1629. 5 August 2010. ISSN: 0013-5194. JCR (2010): 1,004. Cat.: Engineering, Electrical & Electronic (124/247). Q3.
- **'Indoor Radio Noise Long-Term Measurements in Medium Wave Band in Buildings of City Areas in the North of Spain'**. I. Landa, A. Arrinda, I. Fernández, P. Angueira. Antennas and Wireless Propagation Letters, IEEE, vol. 10, pp. 17-20, DOI: 10.1109/LAWP.2011.2107872, 2011. ISSN: 1536-1225. JCR (2011): 1,374. Cat.: Telecommunications (26/79). Q2.
- **'Building Penetration Losses and Noise Levels Characterization in Medium Wave'**. I. Fernández, I. Peña, P. Angueira, U. Gil, J.L. Ordiales, I. Landa. Antennas and Wireless Propagation Letters, IEEE, vol. 11, pp. 1056-1059, DOI: 10.1109/LAWP.2012.2215833, 2012. ISSN: 1536-1225. JCR (2012): 1,667. Cat.: Telecommunications (16/78). Q1.
- **'Carrier and Noise Measurements in the Medium Wave Band for Urban Indoor Reception of Digital Radio'**. Fernandez, I.; Angueira, P.; de la Vega, D.; Pena, I.; Guerra, D.; Gil, U. IEEE Transactions on Broadcasting, vol. 58, issue 1, pp. 98-105, DOI: 10.1109/TBC.2011.2165742, 2012. ISSN: 0018-9316. JCR (2012): 2,087. Cat.: Telecommunications (10/78). Q1.
- **'Smart Grid applications for a practical implementation of IP over Narrowband Power Line Communications'**. N. Uribe-Pérez, I. Angulo, D. de La Vega, T. Arzuaga, I. Fernández, A. Arrinda. Energies 2017, Vol 10, Issue 11, 1782, November 2017. ISSN: 1996-1073. JCR (2017): 2,676. Cat.: Energy & Fuels (48/97). Q2.
- **'On-field Evaluation of the Performance of IP-based Data Transmission over Narrowband PLC for Smart Grid Applications'**. N. Uribe-Pérez, T. Arzuaga, I. Angulo, D. de La Vega, I. Fernández, A. Arrinda. International Journal of Electrical Power and Energy Systems (Elsevier). Volume 100, pp. 350-364, September 2018. ISSN: 0142-0615. JCR (2017): 3,61. Cat.: Engineering, Electrical & Electronic (45/260). Q1.
- **'Characterization of non-intentional emissions from distributed energy resources up to 500 kHz: a case study in Spain'**. I. Fernandez, N. Uribe-Pérez, I. Eizmendi, I. Angulo, D. de la Vega, A. Arrinda, T. Arzuaga. International Journal of Electrical Power and Energy Systems (Elsevier). February 2019. ISSN: 0142-0615. JCR (2017): 3,61. Cat.: Engineering, Electrical & Electronic (45/260). Q1.

- **'A new voltage probe with improved performance at the 10 kHz - 500 kHz frequency range for field measurements in LV networks Measurement'**. *I. Fernandez, M. Alberro, J. Montalban, A. Arrinda, I. Angulo, D. de la Vega.* Measurement (Elsevier). October 2019.
- **'Field trials for the Empirical Characterization of the Low Voltage Grid Access Impedance from 35 kHz to 500 kHz'**. *I. Fernandez, A. Arrinda, I. Angulo, D. de la Vega, N. Uribe-Pérez, A. Llano.* IEEE Access 2019.

## C.2. Research projects and grants

### Participation as researcher in 1 FP7 project:

- **Software for the Optimal Place Calculation for Wind Farms (SOPCAWIND). FP7-296164-2** European Union. (Conv. FP7-ICT-2011-SME-DCL). Consortium: UPV/EHU(ES), Tecnalía (ES), EUROHELP (ES), GEOX (HU), ANEMOS (DE), 3E (BE). Coord. Tecnalía. P.I.: David de la Vega (UPV/EHU). 1/5/2012- 30/4/2014. 1.950.000 €. (328.497 € for UPV/EHU).

### Participation as researcher in many research projects with competitive fundings.

Some of the most relevant:

- **COM4RED-2: Investigación de las comunicaciones PLC para la red eléctrica en nuevas bandas de frecuencia. KK-2018/00037.** Gobierno Vasco. Conv. Elkartek. P.I.: David de la Vega (UPV/EHU). 01/01/2018 -31/12/2019. 149.773,25 €.
- **COM4RED: Investigación de las comunicaciones PLC en nuevas bandas de frecuencia para redes eléctricas. Caracterización de interferencias e investigación de nuevos servicios a través de la red eléctrica. KK-2017/00071.** Gobierno Vasco. Conv. Elkartek. P.I.: David de la Vega (UPV/EHU). 01/01/2017 - 31/12/2017. 78.499,90 €.
- **Diseño y desarrollo de un convertidor de alta potencia optimizado para la mejora de la eficiencia y la calidad de red (CALIREN). ZL-2017/00178.** Gobierno Vasco, conv. Hazitek. Leader: Jema Energy S.A. P.I. (UPV/EHU): David de la Vega. 01/07/2017 - 31/12/2017 15.062 €.
- **BID3ABI: Big Data para RIS3 2016. KK-2016/00096.** Gobierno Vasco. Conv. Elkartek. P.I.: Eduardo Jacob (UPV/EHU). 01/04/2016 -31/12/2016. 22.005,33 €.
- **BID3A: Big Data para RIS3. KK-2015/0000080.** Gobierno Vasco. Conv. Elkartek. P.I.: Eduardo Jacob (UPV/EHU). 01/01/2015 -30/03/2016. 5.719 €.
- **WIND-RAD-Evaluación del impacto de los Parques Eólicos en los Servicios de Radiocomunicaciones. TEC2012-32370.** Ministerio de Economía y Competitividad Conv. de proyectos de inv. Fund. no orientada 2012. P.I.: David de la Vega (UPV/EHU). 01/01/2013 -31/12/2015. 137.000 €.
- **Transmisión de Televisión 3D y servicios avanzados en redes híbridas Broadband-Broadcast (3DSARHBB). S-PE12UN076.** Gobierno Vasco-Saiotek. P.I.: Amaia Arrinda Sanzberro (UPV/EHU). 01/01/2012 - 30/6/2014. 71.452,19 €.
- **Evaluación de las emisiones radioeléctricas de instalaciones WLAN/WIFI para el control de riesgos y la definición de una metodología óptima de despliegue (OPTIWIFI). S-PE12UN066.** Gobierno Vasco. Conv.Saiotek. P.I.: David Guerra Pereda. 01/01/2012-31/12/2013. 65.115,45,30 €.
- **Técnicas de mitigación del impacto de parques eólicos sobre los servicios de radiocomunicaciones (MITRAD). S-PE12UN070.** Gobierno Vasco-Saiotek. P.I.: David de la Vega (UPV/EHU). 1/01/12- 31/12/13. 99.970,42 €.

- **Nueva generación de sistemas de radiodifusión digital terrestre (NG RADIATE). TEC2009-14201.** Ministerio de Ciencia e Innovación (MICINN). P.I.: Juan Luis Ordiales Basterretxea. 01/01/2010 - 31/12/2012. 204.500 €.
- **Estudio de la degradación de la calidad de la televisión digital en presencia de parques eólicos (CATELDIA). SA-2010/00063.** Gobierno Vasco- Saiotek. P.I.: David de la Vega Moreno (UPV/EHU). 01/01/2010 - 31/12/2011. 96.662,49 €.

## C.3. Contracts

### Participation as researcher in many non-competitive contracts.

Some of the most relevant:

- **Impact study of a wind farm in Sassano (Potenza, Italy) on the digital television services.** Rai Way S.P.A. P.I.: David de la Vega Moreno (UPV/EHU). 30/06/2014-30/07/2014. 5.200 €
- **Estudio de impacto del parque eólico de Högabjär (Suecia) en la red de transporte de datos.** Nabla Wind Power, S.L. P.I.: David de la Vega Moreno (UPV/EHU). 18/06/2014 - 02/07/2014. 2.300,00 €
- **Impact study of the wind farm 'Kovacica' on the surrounding air traffic control radar systems.** ElectraWinds K-Wind DOO (Bélgica). P.I.: David de la Vega Moreno (UPV/EHU). 20 /5/ 2013- 7 /6/ 2013. 5.071,24 €
- **PRIME en entornos rurales dispersos: Adaptación y validación de protocolo, arquitectura y prototipos de equipamiento de comunicaciones PRIME para entornos de despliegue de naturaleza distribuida.** Bidelek sareak, A.I.E. P.I.: Pablo Angueira Buceta (UPV/EHU). 01/06/2012-31/12/2012. 58.765,00 €.
- **Análisis de la Calidad de Recepción de las Emisiones Ionosféricas DRM (NVIS) de Radio Nacional de España.** RNE. Sociedad Mercantil Estatal Radio Nacional de España S.A.U. P.I.: David Guerra Pereda. (UPV/EHU). 05/2010 - 03/2011. 29.139,85 €.
- **Evaluación del sistema Simulcast para Entornos Urbanos.** Cadena SER. Entidades participantes: UPV/EHU, Vimesa, Cadena SER, Axió. P.I.: Pablo Angueira Buceta (UPV/EHU). 01/06/2007-31/12/2007. 11.000,00 €.
- **DRM Tests in India.** Consorcio DRM. P.I.: Pablo Angueira Buceta (UPV/EHU). 01/01/2007- 30/06/2007. 14.300,00 €.

## C.4. Experience in organizing R&D activities

- **IEEE International Symposium on Broadband Multimedia Systems and Broadcasting.** Bilbao 2009. Technical committee.
- **DRM International Consortium. Digital Radio Mondiale.** Bilbao May 2003. Organization of the TC-SE working group.
- **DRM International Consortium. Digital Radio Mondiale.** Bilbao September 2003. Organization of the TC-SE working group.
- **DRM International Consortium. Digital Radio Mondiale.** Bilbao 2004. Organization of the TC-SE, TC-MN and TC-DI working groups.