PERSONAL INFORMATION

Julie BEUGIN, researcher

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Nationality French

WORK EXPERIENCE

March 2007 – present

Researcher – **Université Gustave Eiffel**

Since 2011

Permanent researcher at **ESTAS** since 01/09/2011, Laboratory of Evaluation of Automated Transport Systems and their Safety, Villeneuve d'Ascq, France

Research interest: Dependability and safety evaluation of complex guided transportation systems, with a focus on specific issues related to wireless solutions embedded in train control applications.

- Contributor to the "Safety of Railway Systems" Chair (2022-2027), supported by CERTIFER Association
- Contributor to the PERFORMINGRAIL project (2020-2023) – PERformance-based Formal modelling and Optimal tRaffic Management for movING-block RAILway signalling, H2020 EU Research and Innovation programme, open call of Shift2Rail
- Contributor to the ERSAT-GGC project (2017-2019) – ERTMS on Satellite Galileo Game Changer, H2020 EU Research and Innovation programme
- Contributor to the STARS project (2016-2018) – Satellite Technology for Advanced Railway Signalling, H2020 EU Research and Innovation programme
- Coordinator of the SIL project (2013-2015) – funded by EPSF (French National Safety Authority), proposal for a guide defining an allocation method for 'Safety Integrity Level' to railway safety functions
- Contributor to the Systuf project (2012-2015) – Telecommunication System for Future Urban Transport, French government programme 'Investments for the Future'
- Contributor to the GaLoROI project (2012-2014) – Galileo Localisation for Railway Operation Innovation, 7th European framework programme
- Contributor to the QualiSar project (2012-2013) – Qualification procedure for Galileo receivers in safety applications, 7th European framework programme

2007-2011

Post-doctoral researcher at **LEOST** from 03/2007 to 08/2011, Laboratory on Electronics, Waves and Signal Processing for Transport, Villeneuve d'Ascq, France

Topic: RAMS-related challenges in demonstrating satellite-based solutions embedded in train control applications.

- 2 studies conducted for the DGITM (French General Directorate for Infrastructure, Transport and the Sea), focused on railway applications of satellite navigation: development of an approach to quantify dependability performance indicators using GPS data analysis, and modelling of signal behaviour using Petri nets.
- Contributor to the Tr@in-MD project (2007-2009) – Intelligent transport of dangerous goods by rail, French research programme for experimentation and innovation in land transport (ANR-PREDIT)

Jan. 2017 – present

Secondment agreement with **Certifer**

- Approved assessor for Independent Safety Assessment (ISA) activities
- Involved in the Grand Paris Express control-command system assessment

Sept. 2012 – 2024

Secondment agreement with **Railenium**

- Contributor to the FLEXY project coordinated by SNCF (Starting year: 2022)
- Contributor to the Shift2Rail-funded projects X2Rail-2 (2017-2020) and X2Rail-4 (2020-2023)
- Contributor to the TC-Rail project (2017-2021) and 'Train-Autonome Voyageurs' project (2018-2023), French innovative and research programme
- Contributor to the SATRAIL feasibility study (2016): navigation and communication satellites for railway CCS

Oct. 2002 – Feb. 2007

ATER, Temporary Research and Teaching Attaché – **UPHF**

Université Polytechnique Hauts-de-France, Valenciennes, concurrently with the preparation of my doctoral thesis

- Training IUT (A-Level+2 years) and engineering students in dependability methods and tools, workflow management, and algorithmic programming
- Research works on railway safety in accordance with railway safety standards, applied within UGTMS / MODUrban European projects (urban guided transport)

March 2002 – Aug. 2002

Engineer – critical applications – **Fraunhofer IVI**

Fraunhofer Institute for Transportation and Infrastructure Systems, Dresden, Germany: Assessment of weaknesses and risk level of video surveillance equipment installed on station platforms. Functional system modelling using UML, FMEA, and Fault Tree. Work conducted within the KOMPAS project funded by the German Federal Ministry of Research

EDUCATION AND QUALIFICATION

Nov. 2024

HDR (Habilitation à Diriger des Recherches)

Université de Lille, France

HDR in Computer Science Engineering, Automation and Signal Processing

Title: Contributions to the Safety Activities of Railway Critical Complex Systems – Advanced Control-Command Systems Context

2008

Qualification as 'Maître de conférence', *Section 61* - Computer Science Engineering, Automation and Signal Processing, France

Oct. 2002 – Dec. 2006

PhD. Thesis — **UPHF**

Université Polytechnique Hauts-de-France, Valenciennes, France

PhD in Automation and Computing Sciences

Title: Contribution to safety evaluation of complex guided transportation systems

Sept. 2001 – Sept. 2002

Master Degree — **LAMIH**

Laboratory of Industrial and Human Automation Control, Mechanical Engineering and Computer Science), Valenciennes, France

Title: Fault tree modelling using neural networks for the safety evaluation of complex systems

Speciality: Industrial Automation and Human-Machine Control

Sept. 1999 – Aug. 2002

Engineering Degree — **INSA Hauts-de-France**

National Institutes of Science and Technology (ex-ENSIAME), Valenciennes, France

Speciality: Automation and Computing

INVITED TALKS / LECTURES

2018 **Satellite positioning in the transport domain: applications and challenges**, Workshop 4: Navigation Technologies and Geographic Information System for a better traffic management, Data Science and Mobility Conference, supported by SBB/CFF/FFS, Lausanne, Switzerland

2012 **RAMS terminology in standardization**, tutorial session at the 9th FORMS-FORMAT symposium, Braunschweig, Germany

2009 **INRETS activities on Galileo, results of recent scientific research**, panel session "GNSS on tracks: railroad", the 7th Munich Satellite Navigation Summit, Germany

2008 **A dependability approach for integrating a satellite positioning system in a railway application**, invited lecture at the Braunschweiger Verkehrskolloquium, DLR -Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center), Braunschweig, Germany

CONFERENCE ORGANISATION

2024, 2022, 2020, 2018, 2016 — Member of the program committee of the Lambda-Mu conference, French reference conference on risk, safety, and reliability topics

2021 — Member of the program committee of the 16th IFAC–CTS'2021 conference

2012 — Member of the program committee of the 9th FORMS-FORMAT symposium

2009 — Member of the program committee of the 9th ITS-T conference

REFEREE ACTIVITY

Referee activities for scientific and research institutions

2018 — Member of the assessment committee for the Risk Research Axis of the CETU - Tunnel Study Centre, French Ministry of Ecological Transition

2013 — Research project reviewer, French National Research Agency (ANR)

Referee activities for journals

IEEE Transactions on Intelligent Transportation Systems – AMC Transactions on Modeling and Performance Evaluation of Computing – IEEE Open Journal of Intelligent Transportation Systems – Journal of Traffic and Transportation Engineering – International Journal of Rail Transportation – Computing – Reliability Engineering & System Safety – IEEE Intelligent Transportation Systems Magazine – Journal of Rail and Rapid Transit – Simulation Modelling Practice and Theory

Participation in doctoral committees

2024 — Doctoral com. member: Mohammed CHELOUATI, Railenium & ESTAS Lab of Université Gustave Eiffel

2022 — Doctoral com. member: Ouail HIMRANE, ESTAS Lab, Université Gustave Eiffel

2021 — Doctoral com. member: Ayyoub IMAKHLAF, Heudiasyc Lab, University of Technology of Compiègne

2018 — Doctoral com. member: Manel BRINI, Heudiasyc Lab, University of Technology of Compiègne

2017 — Doctoral com. member: Subeer RANGRA, Heudiasyc Lab, University of Technology of Compiègne

2016 — Doctoral com. member: Cyril LEGRAND, ESTAS Lab, Université Gustave Eiffel

Participation in selection boards

2025, 2023 — Selection board member: research engineer position in computer science, COSYS department, Université Gustave Eiffel

2022 — Selection board member: lecturer-researcher position (ECC) in computer science, University of Technology of Compiègne

RESEARCH SUPERVISION

Contractual researcher supervision

2021-2022 — Supervision of Mohammed Chelouati, Université Gustave Eiffel, "Safety of Railway Systems" Chair, post-doctoral researcher, *Contribution to safety assurance activities for autonomous trains*

2021-2022 — Supervision of Rim Saddem-Yagoubi, Université Gustave Eiffel, post-doctoral researcher, *Formal approach for the safety of railway moving block systems*

2020-2022 — Supervision of Insaf Sassi, Railenium, research engineer, *Safety assessment of train integrity monitoring and satellite-based localisation systems*

2020 — Supervision of Nourdine Aït Tmazirte, Railenium, research engineer, *Safety behaviour of satellite-based localisation systems*

2013-2015 — Supervision of Thi Phuong Khanh Nguyen, Université Gustave Eiffel, post-doctoral researcher, *Dynamic reliability and availability assessment of satellite-based localisation and communication systems in railways*

2013-2016 — Kiswendsida Abel Ouedraogo, Université Gustave Eiffel, post-doctoral researcher, *Allocation of safety integrity levels in railway systems*

PhD student supervision

Since 2024 — Supervision of Araaf Dinullah Recta, Université Gustave Eiffel / COSYS / ESTAS, *Contribution to the safety analysis of next-generation railway control-command and signalling systems based on moving block principles*

2020-2024 — Supervision of Mohammed Chelouati, Railenium & Université Gustave Eiffel / COSYS / ESTAS, *Contributions to safety assurance of autonomous trains*

2018-2022 — Supervision of Ouail Himrane, Université Gustave Eiffel / COSYS / ESTAS, *Contribution to Safety and Operational Performance Evaluation of GNSS-based Railway Localization Systems Using a Formal Model-based Approach*

2012-2016 — Supervision of Cyril Legrand, Railenium & Université Gustave Eiffel / COSYS / ESTAS, *Contribution to the safety evaluation of railway localisation systems based on GNSS by formalising extended integrity concepts*

Master student supervision

2016 — Supervision of the specialised master internship of Gaël Ouensavi, Polytech'Lille, *Statistical evaluation of performance indicators for a GNSS system embedded in train*

2012 — Supervision of the Master thesis of Nacer Boumeis, Université de Lorraine, *Preliminary safety and reliability study for an LTE-based wireless system*

2012 — Supervision of the Master thesis of Olimpia Hoinaru, Université de Lille, *Formalisation of performance criteria using the Iglos terminology management tool*

2009 — Supervision of the Master thesis of Djily Diaw, Polytech'Lille, *Performance evaluation of a satellite tracking system for freight wagons*

2008 — Supervision of the Master thesis of Mathias Ruiz-Huidobro, INSA Hauts-de-France, *Development of RAIM algorithms - Receiver Autonomous Integrity Monitoring*

PERSONAL SKILLS

Language skills

French — Mother tongue

English — Understanding (listening B2, reading C1), speaking (production C1, interaction B2), writing (C2)

German — Understanding (listening B1, reading B2), speaking (production B1, interaction B1), writing (B1)

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Areas of expertise

RAMS analysis — Reliability, Availability, Maintainability, and Safety methods: PHA, FME(C)A, Fault tree, Markov chains

Railway systems — Control-command and signalling: ERTMS-ETCS / CBTC / moving block principles, recognised expertise in satellite-based railway applications

Normative and regulatory framework
- Railway standards: EN50126 (RAMS), EN50128 (software safety), EN50129 (safety systems for signalling), EN50159 (Safety-related communication) – CERTIFER training certificate
- European regulation: CSM-RA – Common Safety Method on risk evaluation and assessment

Complex system engineering
- Modelling languages: UML, SysML (Eclipse Papyrus SysML 1.6), AltaRica 3.0
- Modelling tools: Petri Nets, configurable timed and probabilistic automata

Programming languages — C, C++

Simulation tools — Matlab / Simulink, GRIF, UPPAAL, UPPAAL-SMC

PUBLICATIONS

Articles in international journals

[1] M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. "A Risk-Based Decision-Making Process for Autonomous Trains Using POMDP: Case of the Anti-Collision Function". In: *IEEE Access* 12 (2024), pp. 5630–5647. DOI: 10.1109/ACCESS.2023.3347500.

[2] A. Boussif, A. Tonk, **J. Beugin**, and S. Collart-Dutilleul. “Operational Risk Assessment of Railway Remote Driving System”. In: *Safety and Reliability journal* (2023). DOI: 10.1080/09617353.2023.2226965.

[3] M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. “Graphical safety assurance case using Goal Structuring Notation (GSN) - challenges, opportunities and a framework for autonomous trains”. In: *Reliability Engineering & System Safety (RESS)* 230 (2023). DOI: 10.1016/j.ress.2022.108933.

[4] O. Himrane, **J. Beugin**, and M. Ghazel. “Implementation of a Model-Oriented Approach for Supporting Safe Integration of GNSS-Based Virtual Balises in ERTMS/ETCS Level 3”. In: *IEEE Open Journal of Intelligent Transportation Systems* 4 (2023), pp. 294–310. DOI: 10.1109/OJITS.2023.3267142.

[5] D.I. De Almeida Pereira, O. Himrane, P. Bon, and **J. Beugin**. “From French National Signalling Systems to ERTMS: Considering the Evolution of Trackside Systems”. In: *International Journal of Signal Processing Systems* 9.2 (2021), pp. 12–16. DOI: 10.18178/ijsps.9.2.11-16.

[6] T. P. K. Nguyen, **J. Beugin**, M. Berbineau, and J. Marais. “Application of fuzzy theory for identifying the required availability of an autonomous localisation unit in European Train Control System”. In: *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations* 23.3 (2019), pp. 265–281. DOI: 10.1080/15472450.2018.1525533.

[7] **J. Beugin**, C. Legrand, J. Marais, M. Berbineau, and E.-M. El-Koursi. “Safety Appraisal of Localization Systems Based on GNSS Used in Train Spacing Control”. In: *IEEE-Access* 6.1 (2018), pp. 9898–9916. DOI: 10.1109/ACCESS.2018.2807127.

[8] K.-A. Ouedraogo, **J. Beugin**, E.-M. El-Koursi, J. Clarhaut, D. Renaux, and F. Lisiecki. “Toward an application guide for Safety Integrity Level allocation in railway systems”. In: *Risk Analysis journal* 38.8 (2018), pp. 1634–1655. DOI: 10.1111/risa.12972.

[9] J. Marais, **J. Beugin**, and M. Berbineau. “A survey of GNSS-based Research and Developments for the European railway signaling”. In: *IEEE-Transactions on Intelligent Transportation Systems* 18.10 (2017), pp. 2602–2618. DOI: 10.1109/TITS.2017.2658179.

[10] C. Legrand, **J. Beugin**, B. Conrard, J. Marais, M. Berbineau, and E.-M. El-Koursi. “From extended integrity monitoring to the safety evaluation of satellite-based localisation”. In: *Journal of Reliability Engineering and System Safety (RESS)* 155 (2016), pp. 105–114. DOI: 10.1016/j.ress.2016.04.011.

[11] T. P. K. Nguyen, **J. Beugin**, M. Berbineau, and M. Kassab. “A new analytical approach to evaluate the critical-event probability due to wireless communication errors in Train Control Systems”. In: *IEEE-Transactions on Intelligent Transportation Systems* 18.6 (2016), pp. 1380–1392. DOI: 10.1109/TITS.2016.2604043.

[12] T. P. K. Nguyen, **J. Beugin**, and J. Marais. “Method for evaluating an extended Fault Tree to analyse the dependability of complex systems: application to a satellite-based railway system”. In: *Journal of Reliability Engineering & System Safety (RESS)* 133 (2015), pp. 300–313. DOI: 10.1016/j.ress.2014.09.019.

[13] **J. Beugin** and J. Marais. “Simulation-based evaluation of dependability and safety properties of satellite technologies for railway localization”. In: *Journal of Transportation Research, part C (Emerging Technologies)* 22 (2012), pp. 42–57. DOI: 10.1016/j.trc.2011.12.002.

[14] **J. Beugin**, A. Filip, J. Marais, and M. Berbineau. “Galileo for railway operations: question about the positioning performances analogy with the RAMS requirements allocated to safety applications”. In: *European Transport Research Review (ETRR)* 2.2 (2010), pp. 93–102. DOI: 10.1007/s12544-010-0032-3.

[15] **J. Beugin** and J. Marais. “Application des principes de la sûreté de fonctionnement à l’évaluation du service de localisation par satellites dans le domaine ferroviaire”. In: *Recherche Transports Sécurité (RTS), Lavoisier* 99 (2008), pp. 89–103. DOI: 10.3166/rts.99.89-103.

[16] A. Filip, **J. Beugin**, J. Marais, and H. Mocek. “Interpretation of the Galileo Safety-Of-Life Service by Means of Railway RAMS Terminology”. In: *Transactions on Transport Sciences, Ministère des transports Tchèques* 1.2 (2008), pp. 61–68. DOI: 10.5507/tots.2008.009.

[17] **J. Beugin**, D. Renaux, and L. Cauffriez. “A SIL Quantification Approach based on an Operating Situation Model for Safety Evaluation in Complex Guided Transportation Systems”. In: *Journal of Reliability Engineering & System Safety (RESS)* 92.12 (2007), pp. 1686–1700. DOI: 10.1016/j.ress.2006.09.022.

Articles in international conferences

[1] M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. “A POMDP-based approach for obstacle avoidance in autonomous trains”. In: *ESREL 2025 - 33rd European Safety and Reliability Conference* (June 15–19, 2025). Stavanger, Norway, 2025.

[2] M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. “Une approche orientée risques pour la prise de décision dans les trains autonomes : Cas de la fonction anti-collision”. In: *24ème congrès Lambda-Mu* (Oct. 14–17, 2024). Bourges, France, 2024.

[3] R. Saddem-Yagoubi, **J. Beugin**, and M. Ghazel. “ERTMS/ETCS L3: Usable Formal Models for the “Loss of Train Integrity” Operation Scenario”. In: *VECoS’24 - 17th International Conference on Verification and Evaluation of Computer and Communication Systems* (Oct. 15, 2024–Oct. 18, 2022). Djerba, Tunisie, 2024.

[4] M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. “A framework for risk-awareness and dynamic risk assessment for autonomous trains”. In: *ESREL 2022 - 32nd European Safety and Reliability Conference* (Aug. 28–Sept. 1, 2022). Dublin, Ireland, 2022.

[5] M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. “Argumentaire de sécurité graphique pour l’assurance de sécurité des trains autonomes”. In: *23ème congrès Lambda-Mu* (Oct. 11–13, 2022). Paris-Saclay, France, 2022.

[6] R. Saddem-Yagoubi, **J. Beugin**, and M. Ghazel. “A Formal Modelling Framework for Moving Block Systems in the PERFORMINGRAIL project”. In: *RAILWAYS 2022 - 5th International Conference on Railway Technology: Research, Development and Maintenance* (Aug. 22–25, 2022). Montpellier, France, 2022.

[7] R. Saddem-Yagoubi, **J. Beugin**, and M. Ghazel. “Methodology Framework for Modelling ETCS-L3 Moving Block System”. In: *TRA 2022 - 9th Transport Research Arena* (Nov. 14–17, 2022). Lisbon, Portugal, 2022.

[8] R. Saddem-Yagoubi, **J. Beugin**, and M. Ghazel. “Verification Framework for Moving Block System Safety: Application on the Loss of Train Integrity Use Case”. In: *11th TRISTAN conference, Triennal Symposium on Transportation Analysis* (June 19–25, 2022). Mauritius Island, 2022.

[9] R. Saddem-Yagoubi, M.-U. Sanwal, S. Libutti, M. Benerecetti, **J. Beugin**, F. Flammini, M. Ghazel, B. Janssen, S. Marrone, F. Mogavero, R. Nardone, A. Peron, C. Seceleanu, and V. Vittorini. “Toward Usable Formal Models for Safety and Performance Evaluation of ERTMS/ETCS Level 3: The PERFORMINGRAIL Project”. In: *ESREL 2022 - 32nd European Safety and Reliability Conference* (Aug. 28–Sept. 1, 2022). Dublin, Ireland, 2022.

[10] A. Tonk, M. Chelouati, A. Boussif, **J. Beugin**, and E.-M. El-Koursi. “A Safety Assurance Methodology for Autonomous Trains”. In: *TRA 2022 - 9th Transport Research Arena* (Nov. 14–17, 2022). Lisbon, Portugal, 2022.

[11] O. Himrane, **J. Beugin**, and M. Ghazel. “Toward Formal Safety and Performance Evaluation of GNSS-based Railway Localisation Function”. In: *CTS 2021, 16th IFAC Symposium on Control in Transportation Systems* (June 8–10, 2021). Lille, France, 2021.

[12] A. Tonk, A. Boussif, **J. Beugin**, and S. Collart-Dutilleul. “Towards a Specified Operational Design Domain for a Safe Remote Driving of Trains”. In: *ESREL 2021 - 31st European Safety and Reliability Conference* (Sept. 19–23, 2021). Angers, France, 2021.

[13] A. Boussif, S. Collart-Dutilleul, F. Baranowski, **J. Beugin**, and W. Schön. “Démonstration de la sécurité opérationnelle de la téléconduite des trains : contexte, méthodologie et défis”. In: *22ème congrès Lambda-Mu, e-congrès*. France, 2020.

[14] D. I. De Almeida Pereira, O. Himrane, P. Bon, and **J. Beugin**. “From French National Signalling Systems to ERTMS: Considering the Evolution of Trackside Systems”. In: *ICCSIT 2020 - 13th International Conference on Computer Science and Information Technology, virtual attendance* (Oct. 14–16, 2020). The Netherlands, 2020.

[15] O. Himrane, **J. Beugin**, and M. Ghazel. “Proposition d’une approche orientée modèles pour évaluer la sécurité des systèmes de signalisation ferroviaire utilisant les GNSS”. In: *22ème congrès Lambda-Mu, e-congrès* (Oct. 13, 2020). France, 2020.

[16] O. Himrane, **J. Beugin**, and M. Ghazel. “Towards a Model-Based Safety Assessment of Railway Operation Using GNSS Localization”. In: *ESREL 2020 and PSAM 15 - 30th European Safety and Reliability Conference and 15th Probabilistic Safety Assessment and Management Conference, virtual attendance* (Nov. 1–5, 2020). Venice, Italy, 2020.

[17] I. Sassi, **J. Beugin**, M. Sallak, and N. Ait Tmazirte. “Allocating imprecise safety targets in satellite-based localization systems used in railway signaling operations”. In: *ESREL 2020 and PSAM 15 - 30th European Safety and Reliability Conference and 15th Probabilistic Safety Assessment and Management Conference, virtual attendance* (Nov. 1–5, 2020). Venice, Italy, 2020.

[18] D. Mailland, M. Schaff, A. Thionville, and **J. Beugin**. “Comparaison de l’approche sécurité multi-domaines”. In: *21ème congrès Lambda-Mu* (Oct. 16–18, 2018). Reims, France, 2018.

[19] J. Marais, **J. Beugin**, J. Poumailloux, and M. Gandara. “EGNOS service evaluation in railway environment for safety-critical operations”. In: *7th Transport Research Arena (TRA)* (Apr. 16–19, 2018). Vienna, Austria, 2018.

[20] **J. Beugin**, K.-A. Ouedraogo, E.-M. El-Koursi, J. Clarhaut, D. Renaux, and F. Lisiecki. “Pratiques partagées ou divergentes d’allocation de niveaux d’intégrité de sécurité dans le domaine ferroviaire”. In: *20ème congrès Lambda-Mu* (Oct. 11–13, 2016). Saint-Malo, France, 2016.

[21] K.-A. Ouedraogo, **J. Beugin**, E.-M. El-Koursi, J. Clarhaut, D. Renaux, and F. Lisiecki. “Safety Integrity Level Allocation shared or Divergent Practices in the Railway Domain”. In: *IRSC - International Railway Safety Council* (Oct. 2–7, 2016). Paris, France, 2016.

[22] C. Legrand, **J. Beugin**, B. Conrard, J. Marais, M. Berbineau, and E.-M. El-Koursi. “Approach for evaluating the safety of a satellite-based train localisation system through the extended integrity concept”. In: *ESREL 2015 - European Safety and Reliability conference* (Sept. 7–10, 2015). Zürich, Switzerland: in Podofillini et al. Eds, Taylor & Francis Group, London, ISBN 978-1-138-02879-1, 2015, pp. 1297–1305.

[23] H. Manz, E. Schnieder, D. Stein, M. Spindler, M. Lauer, C. Seedorff, A. Baudis, U. Becker, **J. Beugin**, T. P. K. Nguyen, and J. Marais. “GaLoROI: Satellite-based localization in railways”. In: *IC-ARE’15, International Congress on Advanced Railway Engineering* (Mar. 2–4, 2015). Istanbul, Turkey, 2015.

[24] T. P. K. Nguyen, **J. Beugin**, M. Kassab, and M. Berbineau. “Analytical approach for evaluating LTE communication errors in train control application”. In: *IEEE ICC-DVC, International Conference on Communications- 1st workshop on Dependable Vehicular Communications* (June 8–12, 2015). London, UK, 2015.

[25] K.-A. Ouedraogo, **J. Beugin**, E.-M. El-Koursi, J. Clarhaut, D. Renaux, and F. Lisiecki. “Harmonized methodology for Safety Integrity Level allocation in a generic TCMS application”. In: *ESREL 2015 - European Safety and Reliability conference* (Sept. 7–10, 2015). Zürich, Switzerland, 2015, pp. 3579–3587.

[26] C. Legrand, **J. Beugin**, B. Conrard, J. Marais, M. Berbineau, and E.-M. El-Koursi. “Causal analysis methodology of multisensor systems based on GNSS”. In: *Railways 2014, the 2nd International Conference on Railway Technology: Research, Development and Maintenance* (Apr. 8–11, 2014). Ajaccio, Corsica, France, 2014.

[27] T. P. K. Nguyen, **J. Beugin**, M. Kassab, and M. Berbineau. “Modelling Communication Based Train Control system for dependability analysis of the LTE Communication network in train control application”. In: *IEEE EMS-8th European Modelling Symposium on Mathematical Modelling and Computer Simulation* (Oct. 21–23, 2014). Pisa, Italy, 2014.

[28] T. P. K. Nguyen, **J. Beugin**, and J. Marais. “RAMS analysis of GNSS based localisation system for the train control application”. In: *IEEE ComManTel 2014, the 2nd International Conference on Computing, Management and Telecommunications* (Apr. 27–29, 2014). Da Nang, Vietnam, 2014.

[29] K.-A. Ouedraogo, **J. Beugin**, E.-M. El-Koursi, J. Clarhaut, D. Renaux, and F. Lisiecki. “Allocation rules of Safety Integrity Levels in a generic TCMS application”. In: *10th FORMS-FORMAT symposium (Formal Methods for Automation and Safety in Railway and Automotive Systems)* (Sept. 30, 2014–Oct. 2, 2015). Braunschweig, Germany, 2014.

[30] O. Hoinaru, **J. Beugin**, and J. Marais. “Contribution to a terminology related to dependability for the qualification of an on-board satellite-based system”. In: *In proceedings of the 2nd ICTIS conference (International Conference on Transportation Information and Safety)* (June 28–July 1, 2013). Wuhan, China, 2013.

[31] C. Legrand, **J. Beugin**, B. Conrard, J. Marais, M. Berbineau, and E.-M. El-Koursi. “Sensitivity Assessment to Analyse Dependability of a Multisensor Localisation System based on GNSS”. In: *IEEE ITS-T, Intelligent Transportation Systems-Telecommunications conference* (Nov. 5–7, 2013). Tampere, Finland, 2013.

[32] T. P. K. Nguyen, **J. Beugin**, and J. Marais. “Dependability evaluation of a GNSS and ECS based localisation unit for railway vehicles”. In: *IEEE ITS-T, Intelligent Transportation Systems-Telecommunications conference* (Nov. 5–7, 2013). Tampere, Finland, 2013.

[33] **J. Beugin** and J. Marais. “Propriétés de sûreté de fonctionnement d’un système embarqué de localisation par satellites dédié à la sécurité ferroviaire”. In: *18ème congrès Lambda-Mu* (Oct. 16–18, 2012). Tours, France, 2012.

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