BOULOUET Henri
39, rue Thénard, 69008 LYON
Tél.: + 33 6.88.78.06.51
mail: henri.boulouet@orange.fr
https://www.linkedin.com/in/henri-boulouet-3319a0/
www.mersyse.com

System Engineer, PhD

Requirement Engineering

Complex System Development

Main skills

- Lean approach to complex system development, requirement and resource driven, natively including safety and reliability viewpoint.
- Concurrent engineering from the different perspectives contributing to product development: meeting the stakes, safety and reliability, Integrated Logistics support, …
- Project organization, agility focused – roles, process and management based on autonomous teams working in agile mode in extended enterprises.
- Model Based System Engineering: simulation, functional and dysfunctional, virtual integration, reference for software development and test/verdict in IVVQ phase.
- Team building - Training – coaching and dissemination.
- Evolutive information system: PLM, ECM, Configuration Management, BPM, …:

Main Achievements

- Relativized Systemic: (**RS**) Formal infra-framework making possible the integration of the different scientific based disciplines contributing to a given project aiming either at innovation or knowledge building.
- Relativized System Engineering (**RSE** - mechatronic developments), and contribution to Relativized Information Management by Fabrice Fleuchey (**RIM**: used as PLM for embedded system development): 2 operational and tooled developments of **RS**.
- Project and organization management, configuration management …), users training, urbanization.
- Business analysis: needs/requirements safety and reliability driven, acceptability of usage features induced by solution design, trade-off between the different standpoints.
- Mechatronic system engineering: MBSE, technical documentation (specification, design, architectures), simulation, automated testing
- Technical Information System Development: Integrated Logistic System, Product Lifecycle and configuration Management (French Aerospatiale), Automated generation of interactive technical documentation (French Aerospatiale), collaborative project platform for equipment makers (Aeronautic), interface between Design an manufacturing (Renault Truck, Volvo, Mac Truck), quality system in manufacturing (Ariane V)
- RSE IDE development: Rhapsody Modeler encapsulation with Eclipse, code generation out of EMF Relativized Systemic metamodel (with E. Campo) (PSA)

Technical skills

- Requirement & System Engineering, MBSE, PLM, MLM, ALM, SLI
- Relativized System Engineering (RSE) focused on business analysis and resource optimization.
- Relativized Information Management to master complex information system development (RIM)
- Agile development (2TUP, Scrum, Kamban …), SADT
- Languages: UML, Java, Python, C++, VB, PHP, HTML, XML, CSS …
- Tools: UML Modeler (Rhapsody, Enterprise Architect, Objecteering, …), DOORS, Matlab/Simulink, Jira, Epic, Java IDE …
- Standards : IEC 61508, ISO-26262, ISO-29148, ISO 42020, EIA 632, 13882B, DO-178B…

References

- Vincent Brindejonc
  - Position: PhD-Quantum Physics -Thales radar – Safety and Reliability Expert
  - Relation: collaboration to integrate Safety and reliability analysis within RSE framework through operational projects
  - tel : +33 6.33.85.51.12– mail : vincent.brindejonc@wanadoo.fr
- M. Eric Campo
  - Position: Thales Alenia Space (consultant) Developer, Devops Engineer,
  - Relation: co-designer of RSE IDE dedicated to MBSE development and simulation
  - Tel: +33 6 66 82 36 44 – mail : campo_eric@yahoo.fr
- M. Fabrice Fleuchey
  - Position: Stellantis – Electronics Engineer, Embedded Software Quality Assurance
  - Relation: RSE analyst, initiator of the development of RIM IDE (prototype Sonia), operationally used for 10 years by up to 400 designers (engine control)
  - Tel: +33 6 41 73 57 61-mail: fabrice.fleuchey@free.fr – fabrice.fleuchey@stellantis.com
- M. Anthony Kremer
  - Position: Electronic Engineer - ex PSA – Battery System technical leader
  - Relation: under its, supervision, setting up of a Battery Management System specification (BMS) conforming to RSE ("black box", relativized viewpoints)
  - Tel: +33 7 78 67 15 55– mail : Anthony.kremer@laposte.net
- M. Bruno Massys de la Chesneraye
  - Position: Stellantis –Electronic Engineer, B3N project leader [Embedded ECU "black box" specification]
  - Relation: RSE expert user and trainer. used RSE as reference method for B3N project (since 2021-04)
  - Tel: +33 7 82 52 91 31– mail: bruno.massydelachesneraye@stellantis.com
- M. Yann Rogard
  - Position: Alstom Traction System Manager
  - Relation: the former PSA Service Head who hired me, triggered and supervised RSE development and its applications to the design of car body mechatronic systems
  - Tel : +33 6 25 80 75 68 – linkedin : https://www.linkedin.com/in/yann-rogard-18467052/?originalSubdomain=fr
- M. Michel Roux
  - Position: Stellantis – Retired (09/23) Head of the service « Software Design for Dynamic Vehicle Organs"
  - Relation: collaborative work around several projects, such as BMS
  - Tel : + 33 6.88.31.75.56

Publications

- *Systémique Relativisée : Essences des conceptualisations du Réel*
  Editions Universitaires Européennes (2019)
- *Représentations complexes en ingénierie système,* **(complex modelling in system engineering)**
  p101 à p129 in Leleu-Merviel, S. Boulkekbache-Mazouz, H. (dir) (2013) *Recherche en design, processus de conception, écriture et représentations*, iSTE éditions – Londres.
- *Approches innovantes pour la maîtrise des systèmes complexes,* **(mastering safety in complex systems)**
  H. Boulouet, V. Brindejonc Journée IMdR du 6 October 2009
- *Une approche des Signaux* **faibles, (weak signals)**
  H. Boulouet, V. Brindejonc Lambda Mu 16 Avignon October 2008
- **Analyse de risques dans la cadre d'une ingénierie Système Relativisée, (Risk analysis within RSE)**
  H. Boulouet, M. Mugur-Schächter, V. Brindejonc Lambda Mu 16 –Avignon October 2008
- **Integrated Logistic Support Collaborative Platform for equipment developers***,*
  A. Azarian, **H. Boulouet**, V. Brindejonc, ICE2004*.*
- **P**late-forme collaborative de soutien logistique intégré adapté aux PME,**
  A. Azarian, **H. Boulouet**, V. Brindejonc, L. Bouquin, ICSSEA 2003, Paris 2003

Education

2011-14   **Phd in Information Science (UVHC-Lille), « Relativized Systemic »:** Formalization (mathematization – theory of categories) of the RS framework underneath Relativized System Engineering (RSE) and Relativized Information Management (RIM). Proposal of the new concept of "physical Probability Law", for testing and certification (together with Entropy and Complexity physical and formal definitions)

2004-05   **Master M2 MIAGE SIMI** (Internet and Multimedia Information system), Jules Verne University (Picardie): network architecture and administration, information theory, Dynamic website, semantic networks, (PHP, MySQL, Apache, java, ...)

1987-90   **CNAM:** DECF (bachelor's in business economics), 3rd cycle chairs (CNAM): Marketing and Management control – Comparative study of European accounting standards

1985-88   **ESLSCA:** Business School (Paris – Master M2)

Language

ENGLISH: Fluent
                 TOIC (2013): 930
                 SEFIC - Advanced Level: Spoken English for Industry and Commerce (1988) – London Chamber of Commerce.
GERMAN: Intermediate (conversational), study ongoing (B1 -> B2 level)
SPANISH: professional - **Diploma** (1989) - **Certificado**(1988) – Spanish Chamber of Commerce.

Experience

Since 03/2016   **Stellantis : ex-Peugeot Citroën Automobile – Poissy (France) – automotive industry**

Position: System and Modelization engineer
Domain: automotive **-** multi-energy production
Achievements:
- Numerical system model integration and testing
- Need analysis and specification of diversity management and validation framework for STLASim platform (Matlab/Simulink platform for multi-energy powertrain MBSE and simulation)
- Parametrization of powertrain multi-energy simulation models (organic and control) with Matlab/Simulink.
- Lecture development on Relativized System Engineering implementation of Lean and Agile approach.
- Contribution to the development of STLASim tooled chain: data processing from raw technical features to simulation model parametrization, including system configuration.
- Adoption of Relativized System Engineering by PSA Electronics Department as the reference method for B3N project (Embedded ECU "black box" specification with verifiable requirements, RSE method)
- Formal specification of PSA "Battery Management System": requirement development and organization based on product lifecycles relative to the different standpoints (RSE method)
- Agile management of offshore subcontracted modelling work with Jira (Scrum – Kanban)
- Development of a Python application to master the complexity of a Matlab/Simulink based simulation environment.
- Analysis, UML modelling and prototyping with **MRI** tool "Sonia", of an MLM solution to manage the lifecycle and configuration of numeric models (MBSE Model Based System Engineering), based on **RS**
- Design of a Relativized System Engineering training support for the design of mechatronic system formal specification, upon request of Opel designers
- Analysis of a Matlab/Simulink simulation platform (energy and kinematic) and of the usage of resulting model components to develop test bench environments for ECU (MIL, SIL, HIL)

From 03/2011 to 02/2016   **PSA / PCA: Peugeot Citroën Automobile – Vélizy (France)**

Position: System engineer
Domain: automotive - infotainment
Achievements:
- Contribution to the infotainment IDE development.
- Completion and defense (10/2014) on a thesis on « Relativized Systemic », setting up a formal basis for the development and the tooling of a method for complex system engineering (RSE: Relativized System Engineering).
- Development of system and requirement engineering lessons (RSE) - 40 hours - for 2nd and 3th year students ESIGELEC (Rouen) – Call for collaboration introduced by ESIGELEC and associated laboratory

From 07/2005 To 02/2011 PSA / PCA: Peugeot Citroën Automobile – Sochaux (France)

Position: System engineer – Project Manager
Domain: Automotive – car body
Achievements:
- Meta modelling (EMF) of RSE language on Eclipse platform and development of the java code generation chain.
- Prototyping of an RSE IDE based on RSE language for model editing and simulation

- Requirement engineering, design, modelling, simulation and testing, of product services, of mechatronic systems
- Automated generation of system specification (requirements organized in life phases) out of RSE formal models
- RSE user training (method and tool)
- Proof of concept: automated generation of test vectors (for test bench) and verdict out of RSE specification models: labelling of VETESS industrialization project by the French pole of competitiveness "Vehicule du Futur" and grant of a 1 million euros contribution.

From O9/2004 to 06/2005   Assystem Services – Lyon (France)

Position: senior consultant in System Engineering
Domain: Industrial Vehicles
Achievements: contribution to VOLVO PLM design
- Audit and UML modeling of motor prototyping process
- SADT modeling of the co-development motor design process for the PLM platform common to Volvo Trucks, Renault Trucks et Mack Trucks – work mainly based in Sweden (Göteborg) - From Design to manufacturing

From 03/2002 to 08/2004   LIGERON SA – Saint Aubin (France)

Position: senior consultant in System engineering and project risk rating
Domain: Aerospace, automotive, defense
Achievements:
- Design of a technical information system for ONERA (French aerospace lab) to industrialize design release to manufacturing.
- Project risk rating – cost and delay - for EDF (French electricity company) and CEA (Atomic Energy Commission): deconstruction program of nuclear powers of first generation and other related facilities.
- Audit of embedded software development process and artifacts (printing automatons, vehicle headlights adjustment system, C code)
  Redesign of the safety requirement rule set applicable to automotive embedded critical system, based on MISRA (Motor Industry Software Reliability Association) and DO 178B (Airborne Systems and Equipment Certification).
- Designer of a draft proposal for a platform dedicated to the supervision and diagnosis of distant operational systems, based on Remote Data Sentinel product by Technilog (GIAT, Technilog, ADEPA, laboratories LAMIH – Valenciennes - and MODEME - Lyon 3).
- GROWTH Project No GRD1-2000-25102CASH: Collaborative working within the Aeronautical supply chain – design and prototyping of a collaborative platform for aeronautic equipment makers: best performance.

From 01/2000 to 03/2002 Communication and System (CS-SI) - Toulouse (France)

Position: Consultant in System engineering
Domain: Aerospace, Defense
Achievements:
- ATA technical documentation platform for aeronautic equipment makers, need analysis and UML modeling, customization of PLM platform WinPDM by Lascom.
- Technical Leader for the design of the Integrated Logistic System proposed and won by CS, for the M51 program (French ballistic missile).
- Software development: VB (COM/DECOM), C++, FOSI (Formating Output Standard Instance), DOM 2, XSLT, website (International Office for Water)
- Trainer on XML editing platform EPIC by ArborText.
- OIO website development

From 08/1998 to 12/1999   AEROSPATIALE – Space and Defense division

Position: Technical leader – Project manager
Domain: Space and Defense

Achievements:

- Need analysis and Model based specification (UML) of Ariane V quality control system (integration/validation) in production, prior to its implementation through Windchill (PTC).
- Design of an Integrated Logistic Support management platform
- Design of automated information generation out of ILS platform
- Design of technical information modular viewing system. Generation "on the fly" taking into account user's profile, user's need and security considerations - navigation through CGM "intelligent" graphics.
- Development of an IDE for numerical technical documentation (UML/XML scheme, EPIC (Arbortext) customization, stylesheets).

From 09/1995 to 07/1998 AEROSPATIALE Aeronautic division - Toulouse (France)

Position: Software Developer
Domain: aerospace   .
Achievements:

- Technical leader and C developer of software components for the Aeospatiale platform, dedicated to aircraft on board and ground information system.
- Design, development, and deployment of an IDE for numerical technical documentation based on Epic XML editor - SIMAT (Technical land force maintenance and logistic information system)
- Design and development of the automated generation chain of the maintenance documentation of anti-aircraft ROLAND system, out of the bill of material and logistic support information – Congratulations from French Department of National Defense.

From 06/1993 to 08/1995 AEROSPATIALE Missile division - Chatillon (France)

Position: Software Developer
Domain: Defense**.**
Achievements:

- Design and development of an SGML editing platform for AECMA modular documentation, BEST project (Editorial Database).
- Contribution to the development of the DTD (SGML Documentation Type Definition) for RAFALE aircraft.

From 10/1990 to 05/1993 AEROSPATIALE Missile division – Chatillon (France)

Position: Commercial Engineer
Domain: Defense**.**
Achievements:

- Development project cost evaluation, integrating risk analysis
- Drawing up and negotiation of commercial and financial proposals with the Official Services and the manufacturers of countries associated in multilateral weapons programs (TRIGAT - Polyphème /British Aerospace , DASA, ...).

From 02/1990 to 09/1990 KPMG – Creteil Office (France)

Position: Financial audit collaborator
Domain: Business economics
Achievements:

- Balance control and financial analysis of small and medium organizations.

Other activities

Scuba Diver: N3 – 3 stars CMAS
Private pilot: R3000 et DR400, TB10, CAP 10 (aerobatic), from 1995 to 2003.
Reserve officer: activities from 1987 to 1995 (Combat section leader).