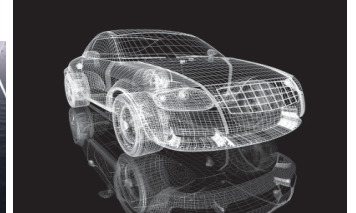
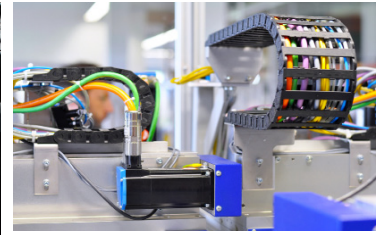




# RTaW-Pegase

RTaW-Pegase helps to conceive safe and optimized switched Ethernet networks — automotive, industrial and avionics Ethernet. RTaW-Pegase computes tight upper bounds on communication delays and buffer utilization, and includes advanced configuration algorithms that ensure correctness and an optimized use of the hardware and software components.



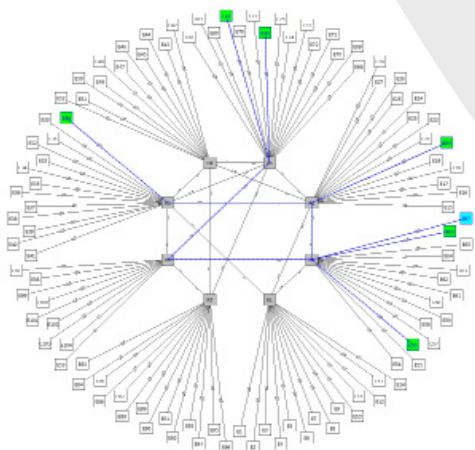
Customers include Airbus Group companies, CNES, Daimler Cars, Renault Group and ABB

## MODELING, SIMULATION AND CONFIGURATION OF SWITCHED ETHERNET NETWORKS

### HOW RTaW-PEGASE WILL HELP YOU DESIGN OF SAFE AND OPTIMIZED ETHERNET AND AFDX NETWORKS?

Support your design choices by evidence — RTaW-Pegase computes performance metrics such as link loads, communication latencies and buffers utilization that make it possible to predict network performances in all possible use-cases. Besides, RTaW-Pegase offers features to investigate specific scenarios and compare the impact of different design and configuration alternatives.

Cost-optimize your networks — RTaW-Pegase provides bounds on the communication latencies that are provably close to the actual worst-case situation, avoiding thus the over-provisioning of resources. In addition, RTaW-Pegase includes design space exploration algorithms to optimize network topologies (e.g., number and location of switches), data streams routing and allocation of the software functions on the stations.



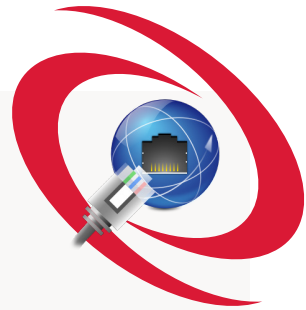
Design for the future — with RTaW-Pegase, you know in advance the extent to which your networks will be able to grow in future evolutions of a system.

Results you can trust — RTaW-Pegase is no black-box software you have to blindly trust the results of. RTaW-Pegase relies on the strong mathematical background of Network Calculus that is accepted in aeronautics certification, its algorithms are described in a formal manner and proved in refereed scientific publications - [see the technical papers co-authored with our partners](#).

Benefits from years of know-how and experience in mission-critical systems — RTaW-Pegase, which builds on more than 20 years of timing verification research, has been developed in scientific partnership with [Onera](#) and it has been chosen by leading companies from the aerospace and industrial domains - see the companies that trust us.

Ready for certification: whatever your application domain and safety standards, we can be your partner and deliver what you need in certification projects.

Best value for money — RTaW-Pegase is less expensive than competitors' solutions - but don't take our word for it, [contact the product manager](#) for a Webex demo and a free fully functional evaluation version.



## KEY FEATURES

- Support industrial Ethernet, automotive switched Ethernet (incl. Some/Ip SD, TSN/TAS, AVB/CBS, preemption), time-triggered Ethernet (incl. SAE AS6802) as well as AFDX (ARINC664) with arbitrary speeds and topologies,
- Support the analysis of heterogeneous communication architectures made up of CAN (2.0A, 2.0B, CAN FD and ARINC825), Ethernet, AFDX and ARINC429 buses interconnected through gateways,
- Support Network-on-Chip for Kalray MPPA and STMicroelectronics manycore architectures,
- New: Design Space Exploration with ZeroConfig-TSN®, a “push-button” approach to automate the design and configuration of TSN network,
- Implement the state of the art of Network Calculus to compute upper bounds on communication latencies, frame jitters and buffers utilization,
- Offer both worst-case analysis and timing-accurate simulation with a parallelized simulation engine to predict worst-case and typical performances,
- Support FIFO, priority, AVB/CBS, TSN/TAS, and round-robin frame scheduling,
- Support periodic and sporadic message transmission patterns, UDP and TCP transmissions, segmented messages (e.g., video streams and FTP traffic), and complex transmission patterns (e.g., Dolp protocol),
- New: Higher-level communication layers, runtime environments and applications can be programmed through Java plugins. This allows the simulation of complete embedded systems,
- Include optimized priority allocation and routing algorithms,
- Maximum pessimism of the computed communication latencies with regard to the true worst-case latencies is limited (typically less than 15%) and is evaluated for each data stream,
- Include NETAIRBENCH, a benchmark generator to create random yet realistic Ethernet/AFDX configurations for early stage evaluation or to study how the network will be able to accommodate more load in future evolutions,
- Extremely fast - suited to design space exploration with several tradeoffs between accuracy and computing time,
- Rich graphical edition and visualization environment with communication architecture editor and Gantt diagrams,
- Runs on all 32 or 64 bit platforms supporting Java - no dongle or license server protection,
- Easy import and export of network configurations and simulation results through CSV, XML files,
- Professional support and custom extensions available,
- RTaW-Pegase ships as libraries too for use in your own applications.

Flow	Rate	Priority	Min. Cycle	Max. Cycle	Min. Jitter	Max. Jitter	Min. Latency	Max. Latency	Min. Delay	Max. Delay	Min. Buff. Util.	Max. Buff. Util.	Min. Buff. Size	Max. Buff. Size	Min. Buff. Util. (w/TSN)	Max. Buff. Util. (w/TSN)	Min. Buff. Size (w/TSN)	Max. Buff. Size (w/TSN)
Flow 1	1000	1	1000	1000	0	0	1000	1000	1000	1000	0.000	0.000	1000	1000	0.000	0.000	1000	1000
Flow 2	2000	2	2000	2000	0	0	2000	2000	2000	2000	0.000	0.000	2000	2000	0.000	0.000	2000	2000
Flow 3	3000	3	3000	3000	0	0	3000	3000	3000	3000	0.000	0.000	3000	3000	0.000	0.000	3000	3000
Flow 4	4000	4	4000	4000	0	0	4000	4000	4000	4000	0.000	0.000	4000	4000	0.000	0.000	4000	4000
Flow 5	5000	5	5000	5000	0	0	5000	5000	5000	5000	0.000	0.000	5000	5000	0.000	0.000	5000	5000
Flow 6	6000	6	6000	6000	0	0	6000	6000	6000	6000	0.000	0.000	6000	6000	0.000	0.000	6000	6000
Flow 7	7000	7	7000	7000	0	0	7000	7000	7000	7000	0.000	0.000	7000	7000	0.000	0.000	7000	7000
Flow 8	8000	8	8000	8000	0	0	8000	8000	8000	8000	0.000	0.000	8000	8000	0.000	0.000	8000	8000
Flow 9	9000	9	9000	9000	0	0	9000	9000	9000	9000	0.000	0.000	9000	9000	0.000	0.000	9000	9000
Flow 10	10000	10	10000	10000	0	0	10000	10000	10000	10000	0.000	0.000	10000	10000	0.000	0.000	10000	10000

2011/11 : RTaW-Pegase received the Best Demo Award at the 32nd IEEE Real-Time Systems Symposium

Product homepage at

<http://www.realtimateatwork.com/software/rtaw-pegase/>



*We help designers build truly safe and optimized systems*