

EDITORIAL



Dear reader,

2019 shall be a great year of growth and product innovation at KRONO-SAFE: as we keep our commitment to strengthen our ASTERIOS solution to meet the performance and safety requirements of the Aerospace & Defense and the Industrial embedded markets, we will also complement our product offering to the new demands of the Automotive market.

Indeed, we are assisting at a seismic shift in the embedded automotive market that will need a paradigm change in tools and methodology to address the fast-growing software and hardware complexity. In this context, last year we completed - with a major Tier-1 automotive supplier - a proof-of-concept study based on an ADAS use case: it has demonstrated that the ASTERIOS solution enables to efficiently develop complex automotive applications on multi-core platforms that are deterministic, ultra-reliable and high-performance by design.

This successful industrial POC has triggered our decision to join the AUTOSAR Development Partner program and participate to the "Requirements on Timing Extensions" development works that aim at extending the AUTOSAR templates with timing information to enable the analysis and validation of a system's timing behavior

Last but not least, we reinforce our customer-oriented organization with the creation of a new "Customer Success" directorate that is offering technical support and professional services to our customers for ensuring the successful development of their software projects.

We hope you enjoy reading this edition of *K-NEWS* and remain at your disposal for any further information you may need.

Didier Roux,
CEO

PRODUCT INSIGHTS



KRONO-SAFE to support new Infineon TriCore AURIX™ 2G Automotive MCU

ASTERIOS RTK now supports the Infineon TriCore AURIX™ 2nd Generation TC397 MCU designed for Automotive applications. ASTERIOS RTK efficiently takes advantage of the specific Infineon AURIX 2G memory architecture to provide optimal multicore data exchanges and outstanding execution performances, while keeping ASTERIOS's determinism and safety properties. For more information, click [here](#).

PARTNERSHIPS



KRONO-SAFE becomes a member of the AUTOSAR Development Partner program

KRONO-SAFE has officially joined the AUTOSAR Development Partner program, with the aim to promote ASTERIOS in the context of the "Requirements on Timing Extensions" AUTOSAR CP release 4.4.0 document. For more information, click [here](#).



KRONO-SAFE appoints VISION Microsystems Co. Ltd. as Distributor for China

KRONO-SAFE has entered into a distribution agreement with VISION Microsystems Co. Ltd. (also known as VISION MC). The agreement calls for VISION MC to act as KRONO-SAFE's "Value-Added Distributor" for the entire ASTERIOS product line to the Aerospace & Defense, Railways and Energy market verticals in China. For more information, click [here](#).

COLLABORATIVE PROJECTS



KRONO-SAFE will participate to the ES3CAP project lead by KALRAY

The objective of the ES3CAP (*“Embedded Smart Safe Secure Computing Autonomous Platform”*) French collaborative project is to build a hardware and software platform for manufacturers developing critical applications that require high-performance computing capacity, in the fields of aeronautics, defense and self-driving vehicles.

Thanks to the ES3CAP project, KRONO-SAFE will be able to expand its ASTERIOS product family to the new strategic “many-core” platforms and thus build strategic partnerships with the project partners around Kalray's MPPA® platform. For more information, click [here](#).



S3P Platform now commercially available!

The S3P Platform aims to enable the rapid development and commercial exploitation of services and products connected to the Industrial Internet of Things (IIoT), combining unique features of agility and portability, safety and security (“Smart, Safe and Secure”). This Platform is now commercially available, following a 3-year and €45M development project in collaboration with the “Embedded France” association and supported by the French government initiative “Nouvelle France Industrielle”. The full history is [here](#).

CONFERENCES & WEBINARS



[Webinar] Real-Time Safety Critical Systems: Going Multi-Core (almost) without breaking a sweat

Multicore architectures are now present (almost) in all systems, yet they remain a challenge for developers when it comes to implementing mission critical industrial applications. In fact, parallel computation as achievable with multicore systems inevitably increases the number of possible interferences and asynchronisms, thus making the combination of possible states virtually infinite.

In practice, this means that the system is more likely to reach a catastrophic erroneous state, which was not expected. But for real-time systems, this also means that, even in the case of a bug-free application, the execution time of each task can vary greatly depending on the interference occurring during execution (cache effects , congestion on the memory bus, hardware and software synchronization costs ...). As a result, covering all system behaviors with thorough testing becomes an insurmountable task, which is obviously a "NO-GO" to any industrial safety standard - like the DO-178 standard for software in the avionics domain.

Discover in this video (in English language), how KRONO-SAFE addresses these issues raised by the use of multicore processors in critical real-time systems.

NEXT EVENTS



Visit us in Hall 4 stand 4-173!

Embedded World 2019 **26-28 February 2019, Nuremberg, Germany** **Hall 4 - Stand 4-173**

Please come and visit us at **Embedded World** in Nuremberg, Germany (February 26-28, 2019). KRONO-SAFE will be exhibiting in **Hall 4, Booth 4-173**. You can pre-register for a free ticket (3-day entrance ticket) using the voucher code **A401976** at

<https://www.messe-ticket.de/Nuernberg/embeddedworld2019/Register?culture=en>.

For more information click [here](#)



Avionics Expo 2019 **12-13 March 2019, Munich, Germany** **Booth A37**

Come and see us at **Aerospace Tech Week** on 12-13 March 2019 in Munich. REGISTER for your FREE Exhibition pass from www.AerospaceTechWeek.com/REGISTER and you can also attend any of the Free Workshops. For more details read the Pre Show Guide via www.AerospaceTechWeek.com/PSG.

WHITE PAPERS

We have issued a White Paper series describing how ASTERIOS can help to accelerate the development of complex, reliable and scalable embedded systems. The series will also include soon a use-case demonstrating how ASTERIOS can create a unique engineering flow - from system and software design up to automated optimal integration and execution onto multicore target platform. You can download below the first three episodes of this series.



In the episode 1 "**An improved engineering process**", we address the issues of how to simplify and accelerate the software development cycle by eliminating the need for iterative, implicit micro-design and build a system that meets the specifications. We explore the recurring problems of process engineering for real-time embedded systems and expose what are KRONO-SAFE's solutions for process engineering.

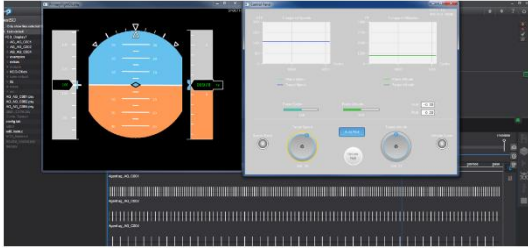


In the episode 2 "**Fast prototyping and scalable multicore performance**" we explain how the continuous integration and delivery process for critical embedded software take benefits of the ASTERIOS approach when the concerns involve topics such as fast prototyping and system performance. How to verify as quickly as possible that the system will offer the expected functionalities, how to size the system accurately.



In the episode 3 "**Shortened testing and certification**" we will discuss how KRONO-SAFE's approach generates deterministic systems that dramatically improve the quality of the system and accelerate the testing cycle and certification.

WORKSHOPS & DEMOS



[Demo] Flight Control System use case

The first seamless timing constraints management: from model to multi-core target

Based on a Flight Control System use case, the demo starts with the timing constraints description thanks to ANSYS SCADE Suite/Architect, followed by the generation of the associated dynamic architecture until its execution on multicore target with ASTERIOS tool suite.

Want to see the demo? Let's contact us at contact@krono-safe.com