

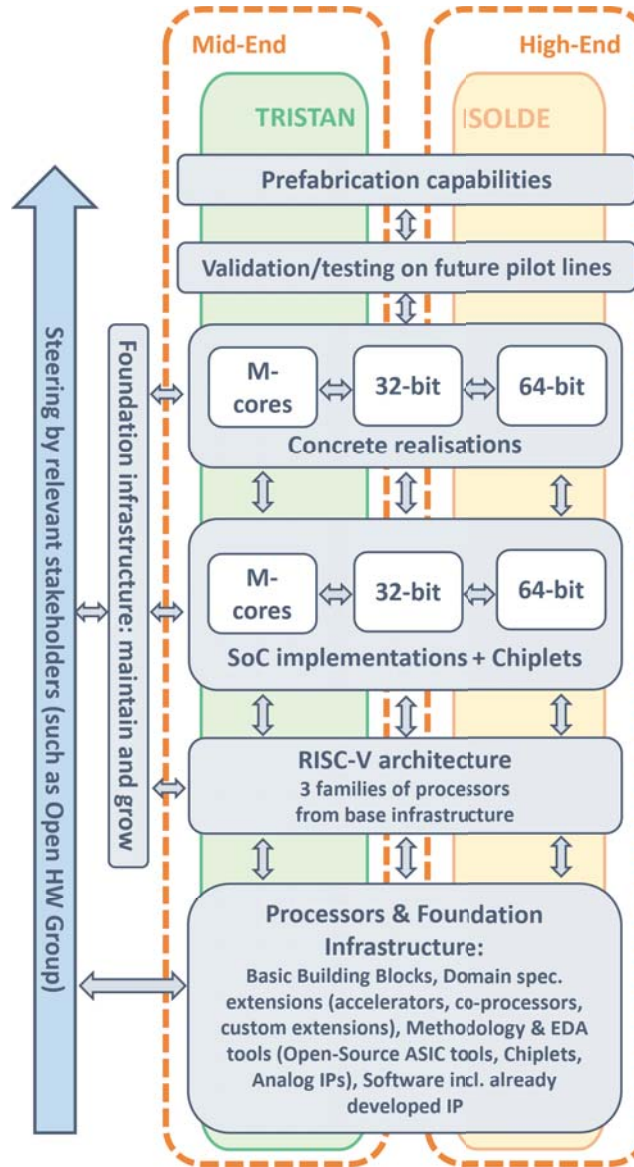
ISOLDE

... with its holistic approach involving all players along the value chain focuses on enhancing the European RISC-V ecosystem with industrial-grade open-source IP, aiming at maturing 2 superscalar high-performance RISC-V multicores (CVA6 and NOEL-V) towards first applications including safety and security critical systems, chip-level and system-level HW components, compilers and the full SW stack. The customizable IPs will be hosted on physically located European servers. Further, ISOLDE will follow and contribute to specifications from suitable industrial bodies and to Europe's long-term RISC-V ecosystem strategy. This way, ISOLDE will have delivered a major contribution to the unification and focus of the full-fledged – industry-supported – ecosystem for RISC-V open-source architecture, especially in the area of embedded high-performance computing, and thus to the creation of a breakthrough design capacity across the EU microelectronics industry to the benefit of key European application domains such as automotive, IoT, smart home and space. The broad, industrial guided consortium comprises 38 partners from Austria, Czechia, France, Germany, Italy, Romania, Spain, Sweden and Switzerland.

TRISTAN and ISOLDE

The TRISTAN and ISOLDE projects are working closely together on establishing RISC-V processor technology in Europe. The results of the projects are planned to complement each other. Each project focuses on a different performance class. Both projects' consortia are composed of partners from industry (both large industries as well as SMEs), research and RISC-V related industry associations.

The 3-year projects fit in the strategy of the European Commission to support the digital transformation of all economic and societal sectors towards a green, climate neutral and digital Europe. New semiconductor components, such as processors, as these are considered of key importance in retaining technological and digital sovereignty will be developed. Development strategies leveraging public research funding that exploit open-source have been shown to boost productivity, increase security, increase transparency, allow better interoperability, reduce cost to companies and consumers, and avoid vendor lock-ins.



github.com/openhwgroup/tristan-isolde-unified-access-page

TRISTAN – Together for RISC-V Technology and Applications



A public funded research project
Runtime: 12/2022 - 11/2025

Abstract

Speeding up the transition to RISC-V chip architecture

Europe needs an open source ecosystem to drive competitiveness and enable greater and more agile innovation. The use of open-source hardware and software drastically lowers the barrier to design innovative integrated circuits. The EU-funded TRISTAN project aims to further expand and develop RISC-V architecture in Europe so that is able to compete with existing commercial alternatives. This open specification eliminates the need to learn and create unique ecosystems for each processor architecture, increasing productivity, security and transparency. TRISTAN approach will be holistic, covering both electronic design automation tools and the full software stack.

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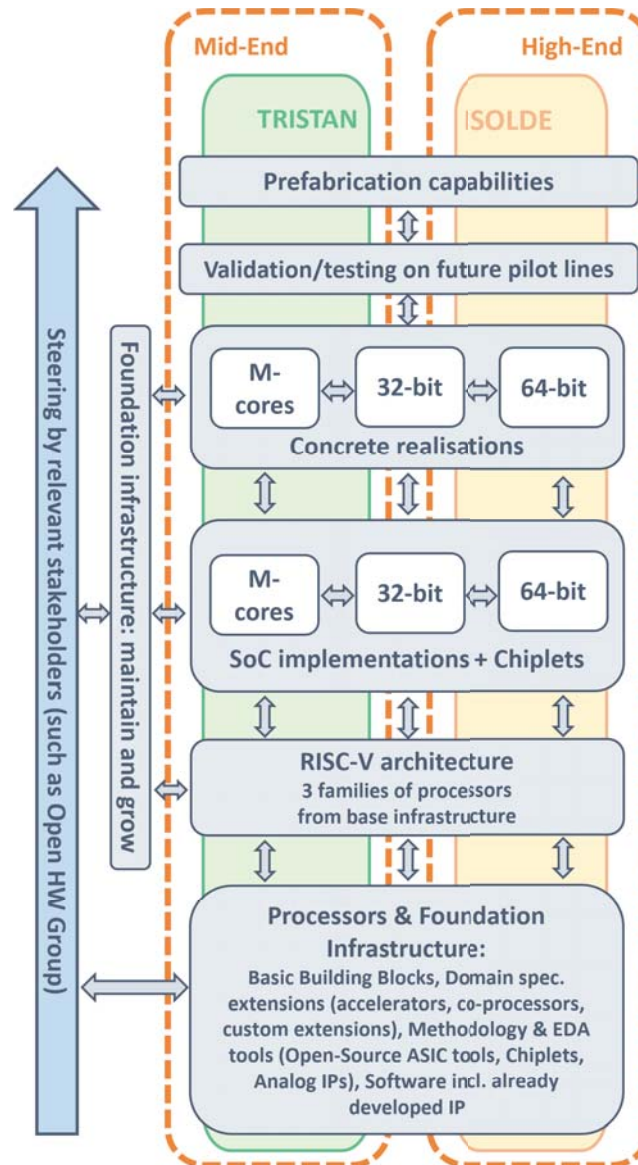
TRISTAN

...will expand, mature and industrialise the European RISC-V ecosystem to be able to compete with existing commercial alternatives. This goal will be achieved by defining a European strategy for RISC-V based designs including the creation of a repository of industrial quality building blocks to be used for SoC designs in different application domains (e.g. automotive, industrial, etc.). The TRISTAN approach is holistic, covering both electronic design automation tools (EDA) and the full software stack. The broad consortium will expose a large number of engineers to RISC-V technology, which will encourage adoption. This ecosystem will ensure a European sovereign alternative to existing industrial players. The 46 partners are from Austria, Belgium, Finland, France, Germany, Italy, the Netherlands, Poland, Romania, Turkey and Switzerland.

TRISTAN and ISOLDE

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ISOLDE – High-Performance, Safe, Secure, Open-Source Leveraged RISC-V Domain-Specific Ecosystems



A public funded research project
Runtime: 05/2023 - 04/2026

Abstract

The ISOLDE project will add high-performance, e.g. 64-bit and superscalar, RISC-V processing systems and platforms at least at TRL 7 for the vast majority of building blocks to the European RISC-V open-source ecosystem, demonstrated for key European application domains such as automotive, space and IoT with the expectation that two years after completion ISOLDE's high performance components will be used in industrial quality products.

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The ISOLDE project, nr. 101112274 is supported by the Chips Joint Undertaking and its members Austria, Czechia, France, Germany, Italy, Romania, Spain, Sweden, Switzerland.

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