The HBP is now poised to start the last of four multi-year work plans, which will take it to the end of its original incarnation as an EU Future and Emerging Technology Flagship. Our plan is that the end of the Flagship will see the start of a new life for the HBP, as an enduring European scientific research infrastructure, EBRAINS, that is on the European Strategy Forum on...

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Rising STARS: International Network for Solutions Technologies and Applications of Real-time Systems (RISE)

EDUARDO QUINONES MORENO
The main goal of Rising STARS is to enable a parallel programming framework for the development and execution of advanced large-scale Cyber Physical Systems (CPS) with High Performance Computing (HPC) and real-time requirements. Overall, there is an urgent necessity to develop run-time parallel frameworks, compatible with HPC, capable of guaranteeing that decisions made at...

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MEEP: MareNostrum Experimental Exascale Platform
JOHN DAVID DAVIS

The MareNostrum Experimental Exascale Platform (MEEP) is a flexible FPGA-based emulation platform that will explore hardware/software co-designs for Exascale Supercomputers and other hardware targets, based on European-developed IP. MEEP provides two very important functions:

- An evaluation platform of pre-silicon IP and ideas, at speed and scale and
- A...

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UP2DATE: Intelligent software UPDATE technologies for safe and secure mixed-critically and high performance cyber physical systems
FRANCISCO JAVIER CAZORLA ALMEIDA
Mixed-Criticality Cyber-Physical Systems (MCCPS) deployed in critical domains like automotive and railway are starting to use Over The Air Software Updates (OTASU) for functionality improvement, bug fixing, and solving security vulnerabilities (among others). But, OTASU entails several difficulties:

1) Safety including non-functional properties like...

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AMPERE: A Model-driven development framework for highly Parallel and Energy-Efficient computation
EDUARDO QUINONES MORENO

Complex, dependable and physically-entangled systems of systems must be supported by innovations to allow a significant reduction of the cost and complexity of system design targeting computing platforms composed of parallel heterogeneous architectures. Software development is one key challenge, as current programming tools do not fully support emerging processor...

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SoBigData-PlusPlus: SoBigData++: European Integrated Infrastructure for Social Mining and Big Data Analytics

DARIO GARCIA GASULLA

SoBigData++ strives to deliver a distributed, Pan-European, multi-disciplinary research infrastructure for big social data analytics, coupled with the consolidation of a cross-disciplinary European research community, aimed at using social mining and big data to understand the complexity of our contemporary, globally-interconnected society. SoBigData++ is set to advance on...

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AQ-WATCH: Air Quality: Worldwide Analysis and Forecasting of Atmospheric Composition for Health

CARLOS PEREZ GARCIA PANDO

AQ-WATCH will develop a supply chain leading to the generation of seven downstream products and services that are innovative for improving air quality forecasts and attribution. These prototypes will be based on existing space and in situ observations of air quality and tailored to the identified needs of international users. The project will allow for the first time small...
MASTECS: Multicore Analysis Service and Tools for Embedded Critical Systems
FRANCISCO JAVIER CAZORLA ALMEIDA

MASTECS will bring to the market innovative and exploitable technology for multicore processor timing analysis (MTA). It will be used by critical embedded software industries (focusing on automotive and avionics) to support advanced software functions (such as autonomous driving) which are competitive factors in every new product.

MASTECS will enable...

SELENE: Self-monitored Dependable platform for High-Performance Safety-Critical Systems
JAUME ABELLA FERRER

Existing HW/SW platforms for safety-critical systems suffer from limited performance and/or from lack flexibility due to building on specific proprietary components, which jeopardize their wide deployment across domains. While some research attempts have been done to overcome some of these limitations, their degree of success has been low due to missing flexibility and...

HiPEAC: High Performance Embedded Architecture and Compilation
XAVIER MARTORELL BOFILL
HiPEAC is a coordination and support action (CSA) that aims to structure, connect and cross-fertilise the European academic and industrial research and innovation communities in Embedded Computing and Cyber-Physical Systems (i) by attracting members from the Cyber-PhysicalSystems community, industry and innovation community, (ii) by organising quarterly networking activities...