



ALMARVI

Algorithms, design methods, and MAny-core execution platform for low-power massive data-Rate Video and Image processing

PROJECT description

Cross-domain many-core platform solution, system software stack, tool chain and adaptive algorithms for massive data-rate low-power image/video processing, high adaptability and abstracting from variations.

RELEVANCE CALL 2013 objectives

- > Modularity, adaptive architecture, cross-domain system software stack and execution platform with well-developed tool chains.
- > Run-time reconfigurability.
- > Seamless scalability and integration of hardware and software components and cross-domain component reuse.
- > Run-time adaptive resource and power management techniques.
- > Incremental development & test.

MARKET innovation

Advanced image and video processing systems are a crucial and resource-consuming part of embedded applications in many sectors. Project results facilitate the transition from a vertical to a horizontal market, leading to low-cost solutions for markets in different industrial domains. The demonstrators generate marketable applications and products in their relevant domains: healthcare, surveillance/security & mobile. Cross-domain applicability will reduce fragmentation, thus increasing the market share of the European supplier industry.

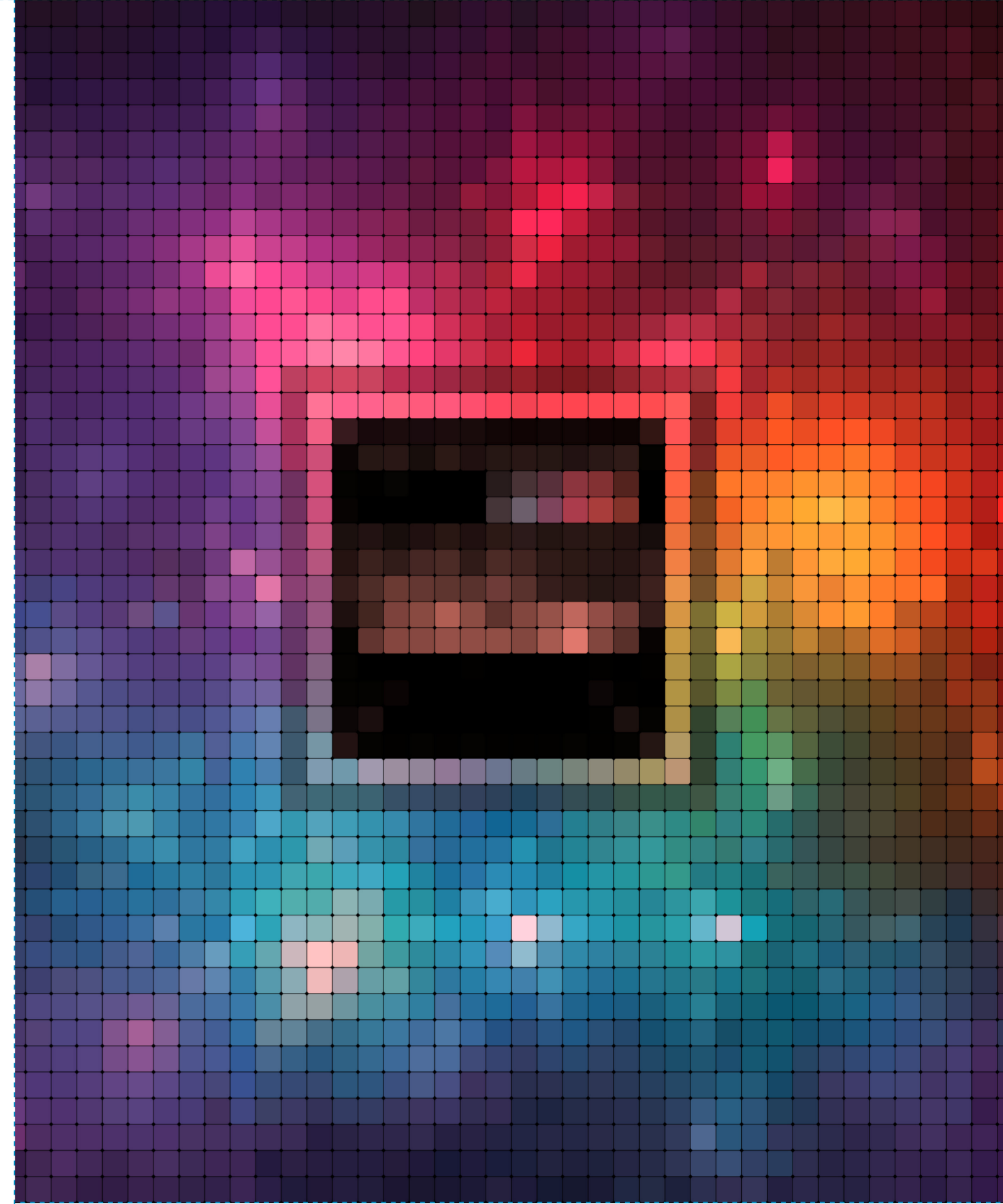
TECHNICAL innovation

Leverage the properties of image/video content, while jointly adapting algorithms and hardware, in order to achieve much higher potential to save power and to enable massive data-rate processing.

- > At the Application layer, the goal is to adapt algorithms towards the architectures.
- > At the System Software Stack layer, the adaptive run-time system allocates resources to different applications with simultaneous, energy-efficient execution.
- > At the Hardware layer, the ALMARVI's many-core execution platform provides the computing capabilities to diverse image/video processing applications.

Relevant topics:

- > Automatic extraction of image/video content properties, deriving resource/power requirements.
- > Negotiating between algorithms and hardware.
- > Identifying and exposing the knobs at algorithmic level.



PROJECT COORDINATOR Frank van der Linden	START 1 April 2014
INSTITUTION Philips Healthcare	DURATION 36 months
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WEBSITE www.almarvi.eu	PARTICIPATING ORGANISATIONS 16
	NUMBER OF COUNTRIES 4

THE NETHERLANDS

TU Delft
Delft University of Technology

VectorFabrics

TU/e
Technische Universiteit Eindhoven
University of Technology

PHILIPS

CZECH REPUBLIC

BRNO UNIVERSITY OF TECHNOLOGY

CAMEA
image & signal processing

UTIA

TURKEY

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