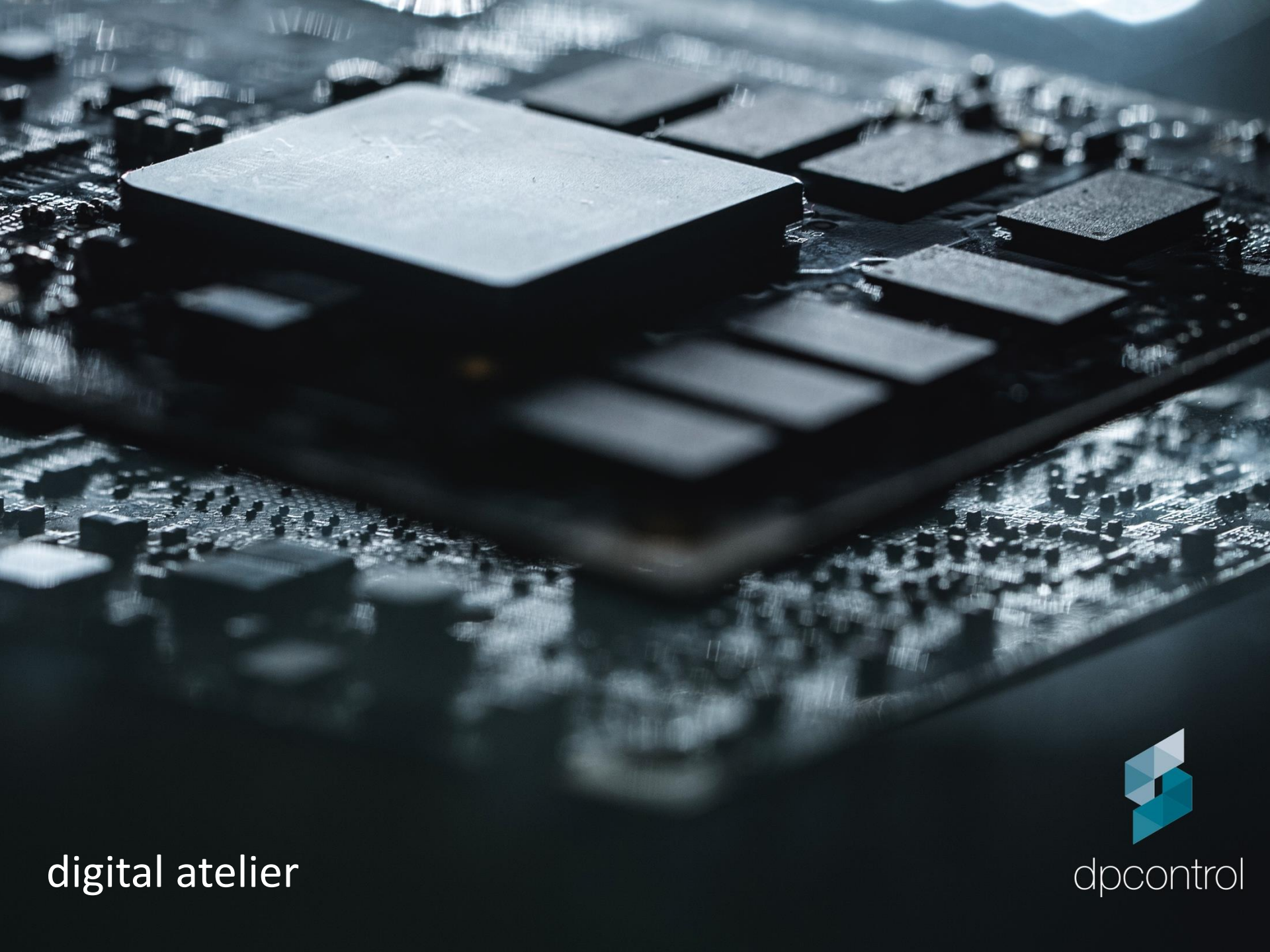
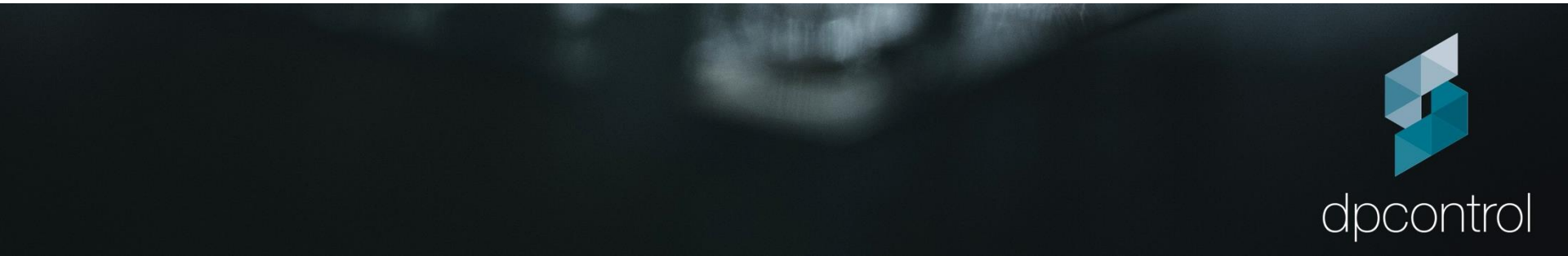

digital atelier
dpcontrol

mission

dpcontrol

is a company specialized in Video & Image processing, able to develop IP, components and high-performance processing systems with low-power consumption.

dpcontrol is a TTM company.



group structure

TTM

Top technology
mission

dpcontrol

expertise

DPControl was born in 2002, as an independent R&D corporation

Strong background in:

- Computer and Machine Vision
- Image processing and understanding
- Hardware design – PCB
- IP design – RTL for FPGA and ASIC
- Realtime OSes (FOSS)

Member since 2012 of I3C Srl - Spin-Off of University of Salerno

dpcontrol

team

9 full researchers - 4 MSc., 3 BSc, 2 PhD

4 visiting students, 4 external designers

Lead by Mario Vigliar, PhD – Chief Scientist of the TTM Group

team

14 journal articles, 18 conference papers
2 international patents at USPTO

IP catalogue

Video and image processing pipeline – ISPido

- Defective pixel removal
- HQ debayering
- CCM, Gamma, Statistics
- dPipeline H264 encoder

AI for IoT

- Logo and shape matching
- OCR for license plate recognition
- Face detection and recognition

dpcontrol

Before ECSEL

ARTEMIS JTI

- SCALOPES project 2008-2011
  - 41 mi€, 18 EU countries involved
  - 38 partners
  - DPC acting as WP Leader, proposing the youngest WP Leader in Artemis
  - Successfully completed, awarded by EC

Italian SME funding

- Startup Campania, 2014

dpcontrol

Ongoing ECSEL activities

Fundings

AI4DI

ECSEL-2018-2-Special-Topic

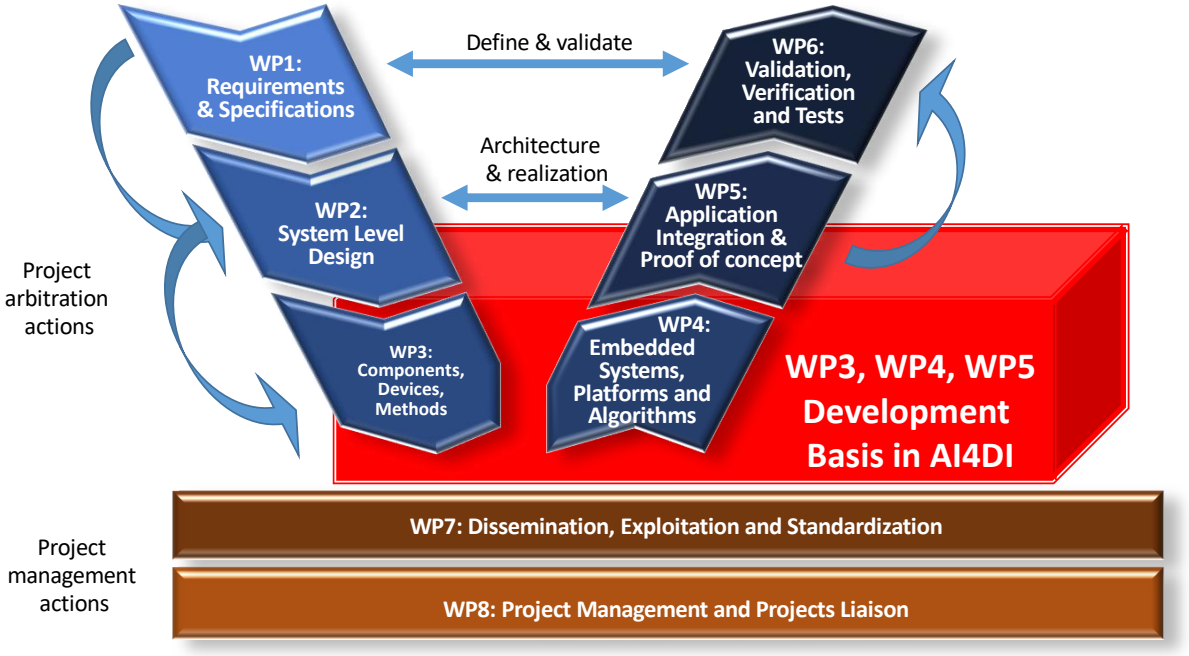
"Digitising and transforming European industry and services"

The AI4DI project aims to combine Industry 4.0 achievements and Artificial Intelligence (AI) to accelerate AI adaptation and digitisation of industrial manufacturing lines. This will be facilitated through transferring machine learning (ML) and artificial intelligence from the cloud to the edge, making AI resilient, safe and secure for the manufacturing and process technology of the future.

dpcontrol

Ongoing ECSEL activities

AI4DI



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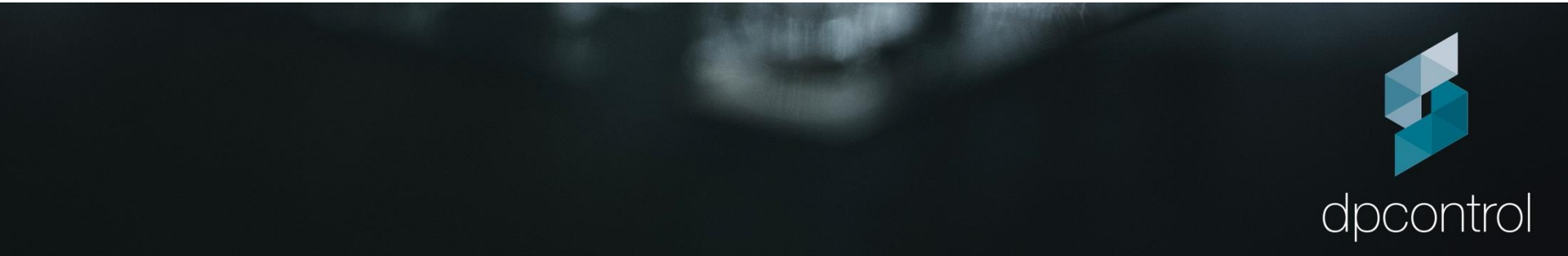
Ongoing ECSEL activities

AI4DI – Most relevant tasks for DPC

Task 1.4 ***[SC3] Machinery and industrial equipment (****leader* ***TBD****, DPC, EDI, IMEC, INTRA, ITML, IUNET, ST-I, SCM, TUD, VIF)*

ST-I, SCM, DPC, IUNET will conduct the analysis of the machinery industry and work together with **EDI, TUD, ITML, INTRA.** Functional specifications and requirements of dedicated accelerators for CNN training and computation, data fusion and machine vision will be provided. Special focus will be placed on multi modal smart sensors and ultra-low power devices.

Task 2.2 ***[UCX, UCY] Hybrid system and sub-systems, HW/SW logic/knowledge partitioning and design (****leader* ***ST-I,*** *DENO, DPC, IMEC, INTRA, IUNET, LINKKER, NXTECH, OTH, SCM, SINTEF, ST-F, TUD, TUM, URCA****)***



Focus applications: 3D Depth

dpcontrol

Focus applications: Pose Estimation

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Focus applications: Visual Inspection System

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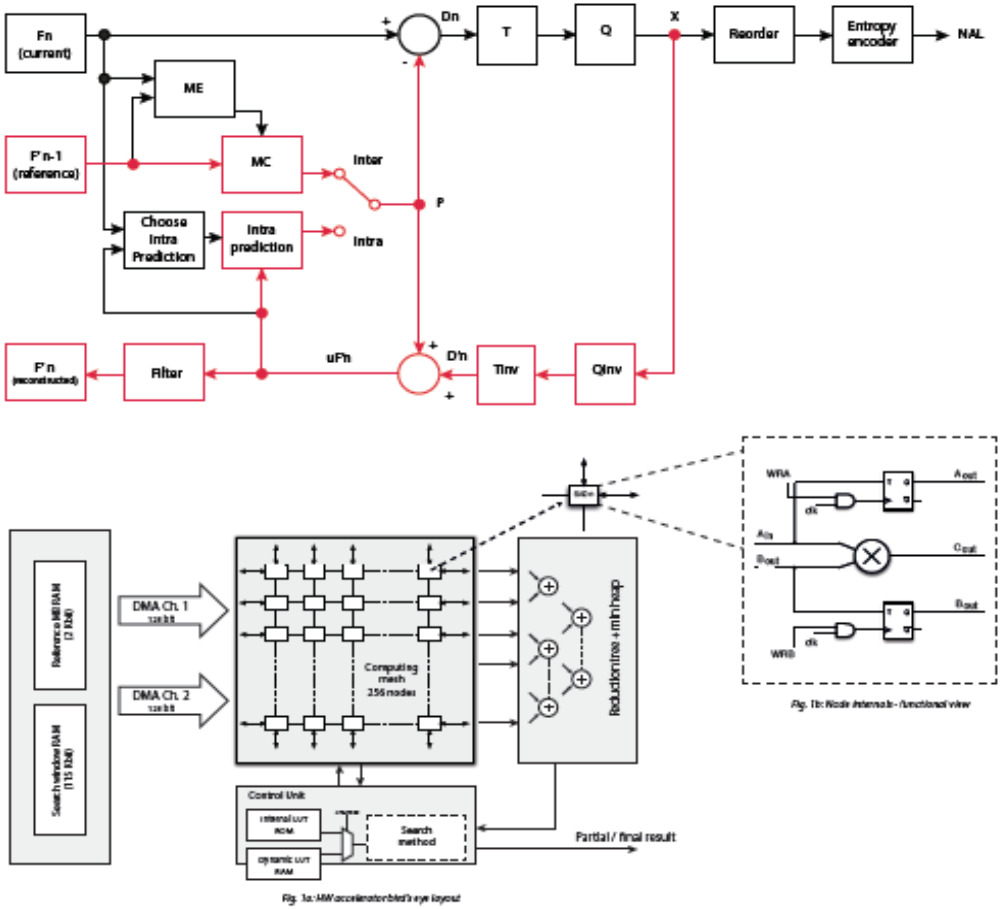
AI-Enhanced Video Encoding

Small footprint H.264 encoder for low-cost devices

- Fully featured **H.264 encoder in FPGA**
- Up to **Full HD 1080p resolution @ 60fps**
- **Switchable quality ratio**
- **Hooked bit-rate controller**
- Introducing **smart power solutions** in video surveillance appliances
- Improved **consumption vs. features ratio**
- Achieve high quality video compression by using **Uneven Multi HEXagon motion estimation technique (UMHEX)**
- Less than **< 2.0dB ΔPSNR** against SW encoder
- ~ **50% energy saving** w.r.t equivalent DSP based design
- Available as full encoder or **"Intra-mode" only**
- When intra-only, **no DRAM frame buffer** is required
- C/C++ bit-accurate models available for **Win32/64, Linux and OSX**



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THANKS !

For any further information, please contact us

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