



Hybrid automated machine integrating concurrent manufacturing processes, increasing the production volume of functional on-demand using high multi-material deposition rates



Additive Manufacturing European Forum **AMEF 2016**

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Implementation | Consortium

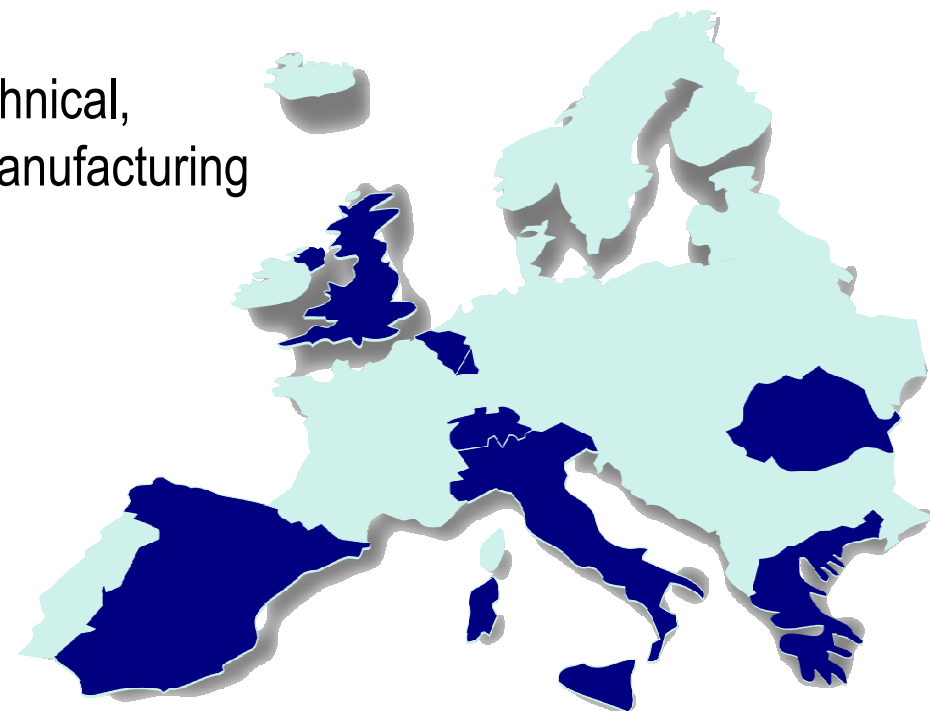
Partner	Country
AITTIP	ES
ACCIONA	ES
ALCHEMIE	UK
ATNS	RO
ARASOL	ES
CECIMO	BE
CRF	IT
CSEM	CH
ESPACE	LU
LEICA	CH
PININFA	IT
TNWPS	RO
TWI	UK
VBC	GR
VERO	UK

Formed by **15 partners:**

- 6 large companies,
- 5 SMEs,
- 3 research organizations and
- 1 industry association

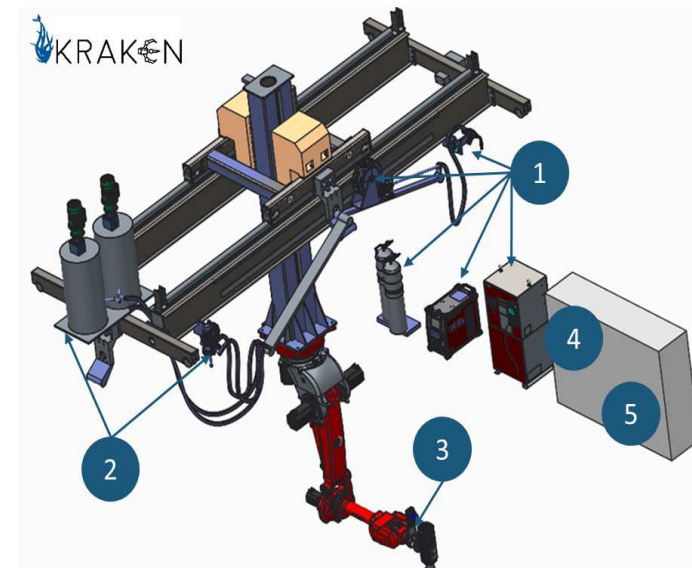
Strong scientific, technical, technological and manufacturing skills

Budget	€5.947.836
Funding	€4.711.586



KRAKEN will focus on the following challenges:

1. High effective additive system for large metal parts by developing **Additive Metal Hybrid Technology** for aluminum grades.
2. New polymer-based additive manufacturing system for large parts → **formulating new materials**.
3. Optimize removal rates and accuracy → **new tools and high speed milling concepts**.
4. Adapt the behavior of the machine to the specific material or situation → **sensors + robotic controller**.
5. New algorithms in **CAM systems for hybrid manufacturing**, including planar horizontal layer strategies, and new direct 3D free-form approaches.
6. Full integration and validation of the all-in-one KRAKEN machine → Full **demonstration in 3 real case** industrial scenarios.
7. Definition of **commercial pathways** and strategies (standardization requirements, market analysis, users acceptance, green procurement procedures, regulatory issues) for the implementation and exploitation of KRAKEN.
8. Demonstration & quantification of **savings on raw materials** and energy due to the efficiency of the novel hybrid manufacturing processes.
9. Promotion of the **development of EU policies** and standards.



- Stimulate the creation of **jobs** in Europe through the implementation and replication of KRAKEN in the short/medium term
- Promote the development of EU **policies and standards** contributing to the acceptance of the production approach derived from KRAKEN
- Facilitate **training** of high-skilled workers concerning hybrid manufacturing
- **Disseminate** the concept and benefits of KRAKEN among experts and general public
- Identify business models and plans to pave the way for the commercial **exploitation of the products** and services derived from the project (i.e. KRAKEN Machine, accuracy based machine controllers, material hybrid AM, HM CAM, high added value manufacturing services, etc.)
- **Direct benefit for the partners**, RD companies, technology providers, service SMEs, Industry Associations, large companies to implement project's results on the shop floor.