



Additive
Factory
Hub



Saclay, France
December 5, 2017

press
RELEASE

Additive Factory Hub: Bringing the power of additive manufacturing to the Factory of the Future

The Additive Factory Hub (AFH) brings together additive manufacturing innovation, development, and integration under one roof. Valérie Péresse, President of the Île-de-France Regional Council, officially opened the new facility on Tuesday, December 5, 2017. AFH is located on the Digiteo Saclay campus at the CEA's center in Paris-Saclay. It was set up to help establish an organized additive manufacturing ecosystem around the scientific research community on the Paris-Saclay campus and, more broadly, in the Île-de-France region, with the overriding objective of responding to the major industrial and economic challenges associated with additive manufacturing.



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In the Factory of the Future, additive manufacturing—more commonly known as 3D printing—will create profound shifts in manufacturing, transforming the way products are made and how people work. Additive manufacturing is strategic. It has the power to completely reshape production processes, opening the door to new geometries, lighter-weight materials and structures, more advanced functionalization, personalized products, more efficient logistics, and better overall plant performance. The *Alliance industrie du futur* (AIF), an industry federation dedicated to supporting the development of the Factory of the Future in France, has been working on additive manufacturing since 2016. The Additive Factory Hub aligns closely with the Alliance's roadmap.

A cross-disciplinary ecosystem covering the entire value chain

The Additive Factory Hub makes the innovation process more efficient by bringing academic research scientists, technology engineers, industrial R&D professionals, SMBs, technology suppliers, and end users together under a single roof. The Additive Factory Hub is an open-access, shared lab. Members and partners make their most advanced equipment and know-how available for projects ranging from early-stage research through to technology transfer, as recommended in the *Alliance industrie du futur* roadmap.

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Additive Factory Hub members and partners¹



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AddUp, Air Liquide, AREVA NP, Arts et Métiers ParisTech, CEA, CETIM, CNRS, Dassault Systèmes, ENS Paris-Saclay, EDF, LNE, MINES ParisTech, Onera, Poly-Shape, Safran, SystemX, Université Paris-Saclay, Université Paris-Sud, Vallourec. The investments in the AFH are financed in part by the Île-de-France Regional Council (€2.5 million for Phase 1, mid-2017 to 2018).

Shared R&D and a strategic vision

AFH members and partners select the topics of their shared R&D programs together. Programs focus on reaching new scientific and technological milestones and can include numerical design and simulation, new manufacturing processes (instrumentation and improvements to equipment), and the testing of manufactured parts, for example. With a well-rounded cohort of digital technology experts, AFH is breaking new ground toward achieving a completely digital manufacturing chain encompassing design, multi-scale and multi-physics simulations, and simulated equipment operation and inspection and testing. Parts and equipment manufacturers will benefit from the knowledge of academic research scientists and metrology experts to improve their manufacturing techniques. This type of cross-disciplinary cooperation will help to improve current processes and develop breakthrough innovations in areas like multi-material manufacturing and integrated IoT capabilities.

AFH is coordinated by CETIM, France’s technical resource center for the mechanical industries, and is operated in partnership with the CEA, both of which are founding members of the *Alliance Industrie du Futur*. AFH will also work directly with small- to mid-sized companies through technology transfer, training programs, and other support services. AFH aligns closely with the Île-de-France regional government’s “smart industry” strategy. Finally, by following the *Alliance Industrie du Futur* roadmap, AFH will help solidly establish the additive manufacturing ecosystem and raise France’s international profile as a source of advanced additive manufacturing technology and expertise.

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¹ Four Instituts Carnot engaged in Carnot industry-specific initiatives in manufacturing are contributing their know-how and experience with innovation partnerships via Arts et Métiers ParisTech (Institut Carnot ARTS), CEA List (Institut Carnot TN@UPSaclay), CETIM (Institut Carnot Cetim), and MINES ParisTech (Institut Carnot M.I.N.E.S).



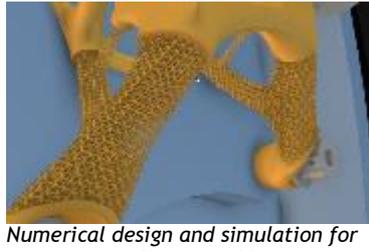
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The members and partners of the Additive Factory Hub will work together on the three stages of the additive manufacturing value chain



Numerical design and simulation for more effective additive manufacturing processes. ©Dassault Systèmes



Development and implementation of additive manufacturing techniques. ©Adrien Daste/Safran



Non-destructive testing of parts made using additive manufacturing techniques. ©CEA

Additive Factory Hub in brief

- ▶ **€40 million** over five years
- ▶ **15** additive manufacturing machines: instrumented benches, open machines, and industrial-grade equipment
- ▶ **More than 400 sq. m** in 2018

More than 15 member and partner companies and organizations

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