



BeAM
BE ADDITIVE MANUFACTURING

Smart industrie le 28/11/2014

BeAM

Parc d'innovation Illkirch - Pôle API

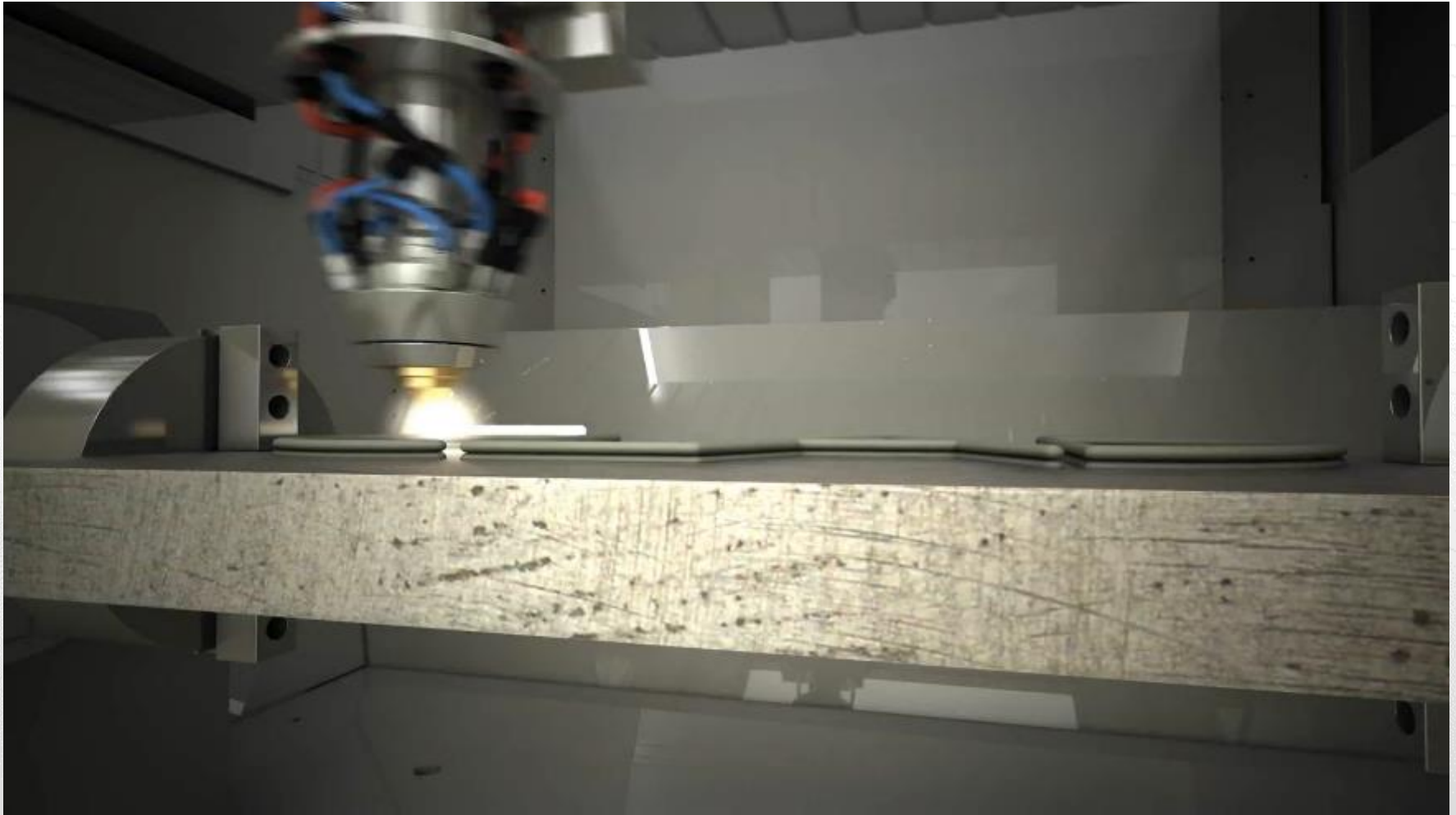
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 **Video : 1 minute to understand CLAD**



http://www.youtube.com/watch?v=IVrz3ia0_VI



WHO WE ARE :

- *Machine manufacturer*
- *Developer of industrial CLAD technology*
- *Open innovation adopter*

AIMS

- *To become top world leader of LMD industrial machine manufacturers*
- *To remain European innovation leader of LMD technology*

YOUNG BUT EXPERIENCED AND INDUSTRIAL:

- *A spin Off of IREPA LASER*
- *CLAD technology (LMD) : result of 15 years' research*
- *Close industrial partnership*



Technological possibilities

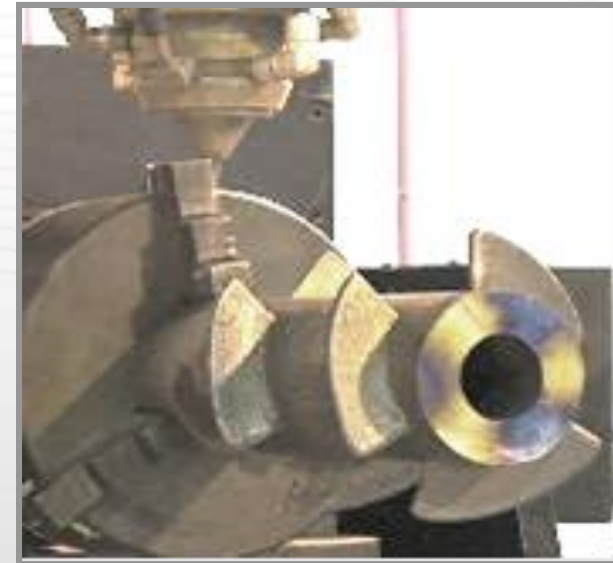
3D Manufacturing



Technological possibilities



Adding shapes and functions



Ø tube : 80mm

Material : Inox 316 L

Deposite :- Width for two deposits(≈ 5 mm)
- Height 20 mm

Manufacturing time for 1 blade :
4min26s



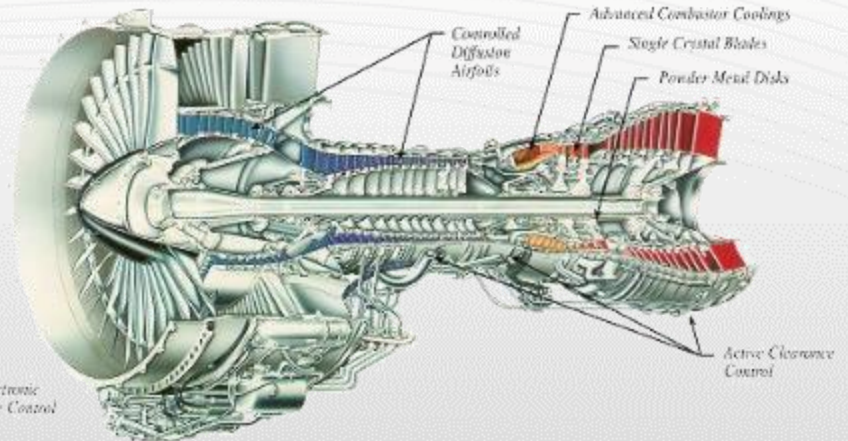
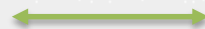
Repairing

EasyCLAD Systems®

MesoCLAD®

EasyCLAD Systems®

MacroCLAD®



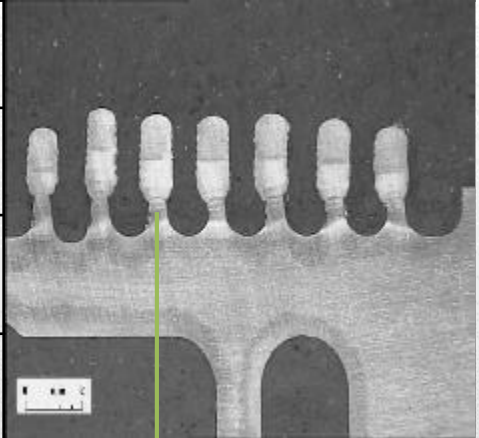
repair of worn labyrinth seal



Industrial proof of concept

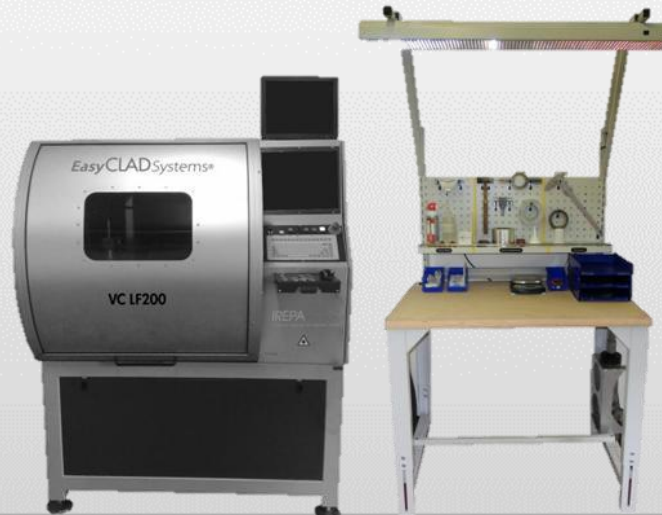
Metal parts repair



Material	Coupe métallographique d'une pièce réparée avant usinage
Nuance of substrate: <i>titanium alloy</i> Post-repair thermal treatment	
Nuance of powder : <i>Ti-6Al-2Sn-4Zr-2Mo</i>	
Granuloma : <i>45 – 75 μm</i>	
Width of deposit : <i>1,2mm</i> Hardness : <i>400Hv</i>	



- *Real Industrial proof of concept with **CHROMALLOY***
- *Highest qualification obtained in aeronautical field for critical parts (30 000 RPM turning part in the engine)*
- *> 600 repaired parts*
- *Process validated and qualified by the motorist Pratt & Withney (Ti6242, Inconel 718, Waspalloy, Inconel 713)*
- *Process duration: 2h/part*
- *Technology transfer in progress*



➤ Standard

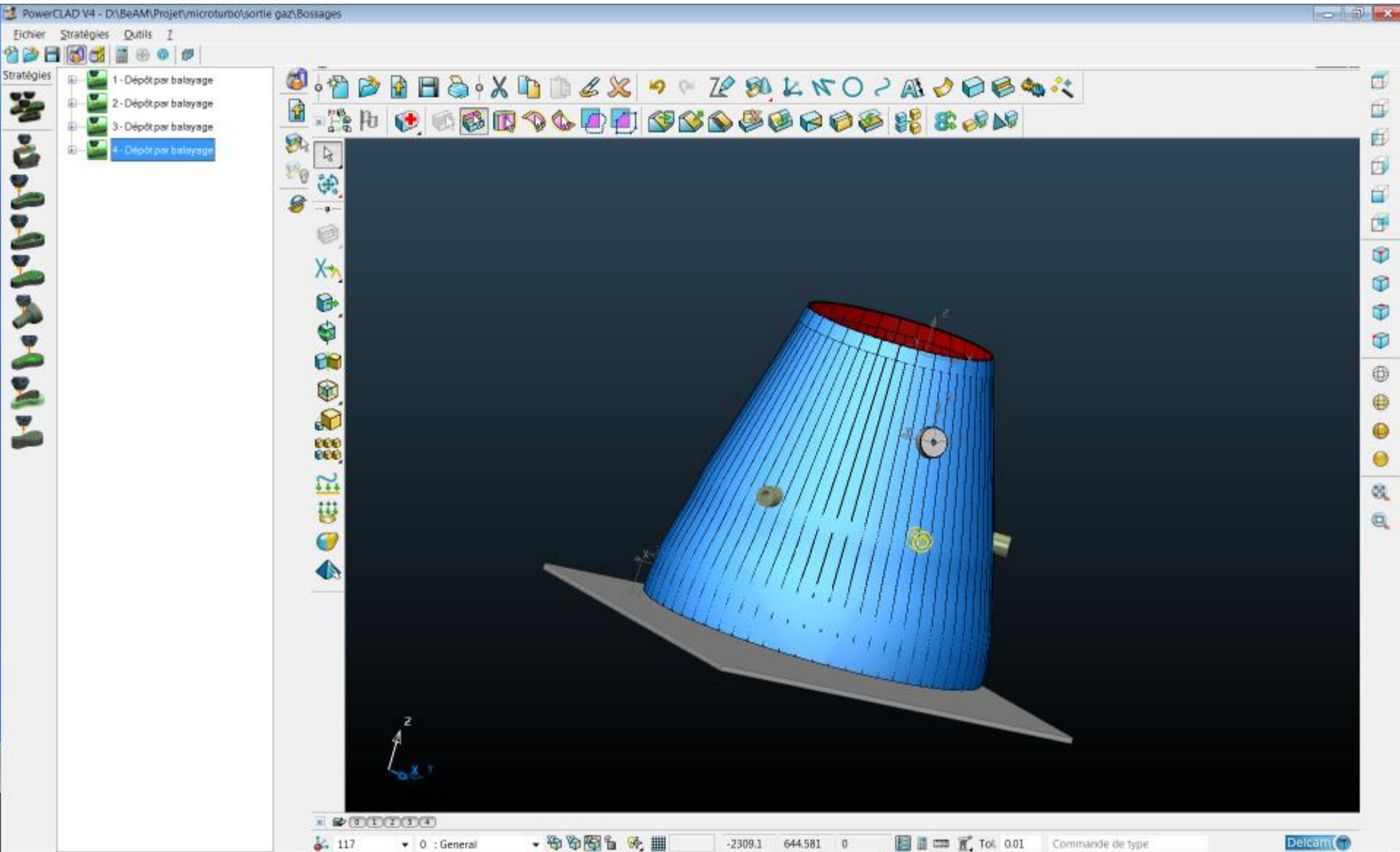
Nozzles	MésoCLAD	MacroCLAD
Model		
Power for manufacturing		
Power for Cladding		
Size of layers		
Volume of deposition		
Precision deposit		
Dimension of the nozzle		
Robustness of the nozzle		
Evolvutivity of the nozzle		
Fields of application		

➤ Specialized nozzle development





FAO PowerCLAD Software

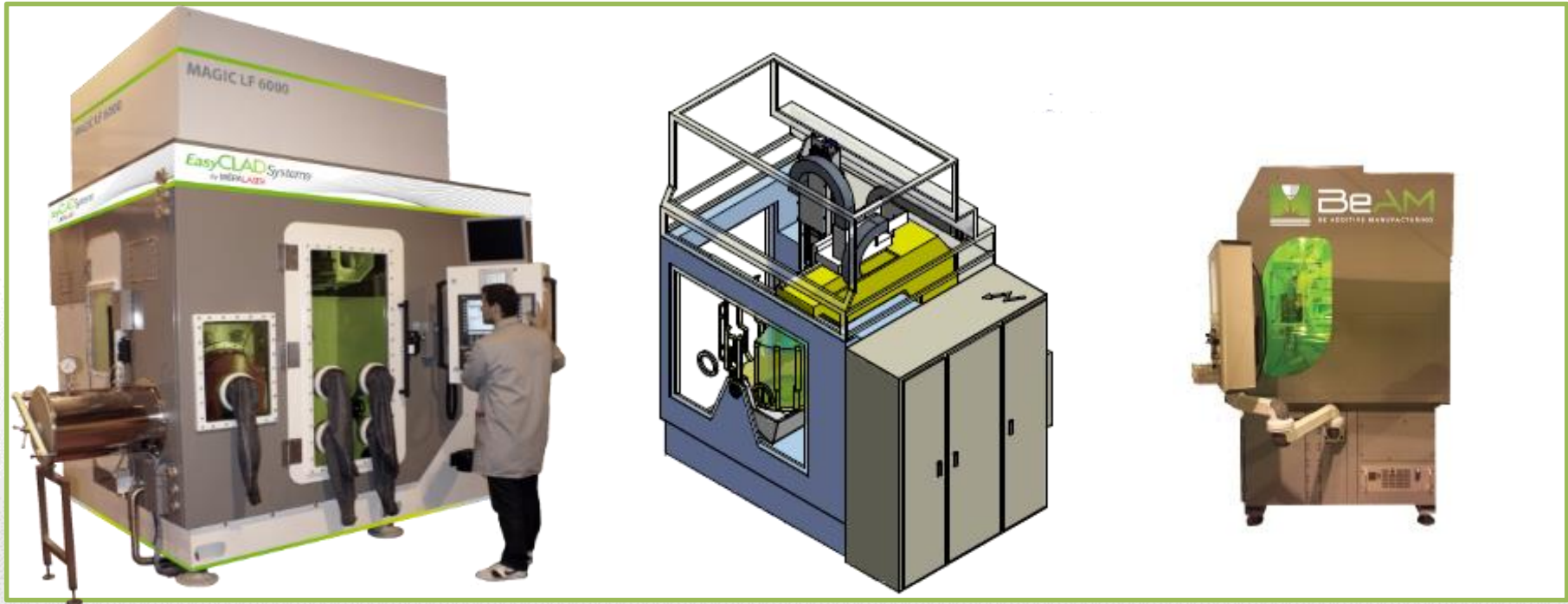




Experience Machine



Standard machines

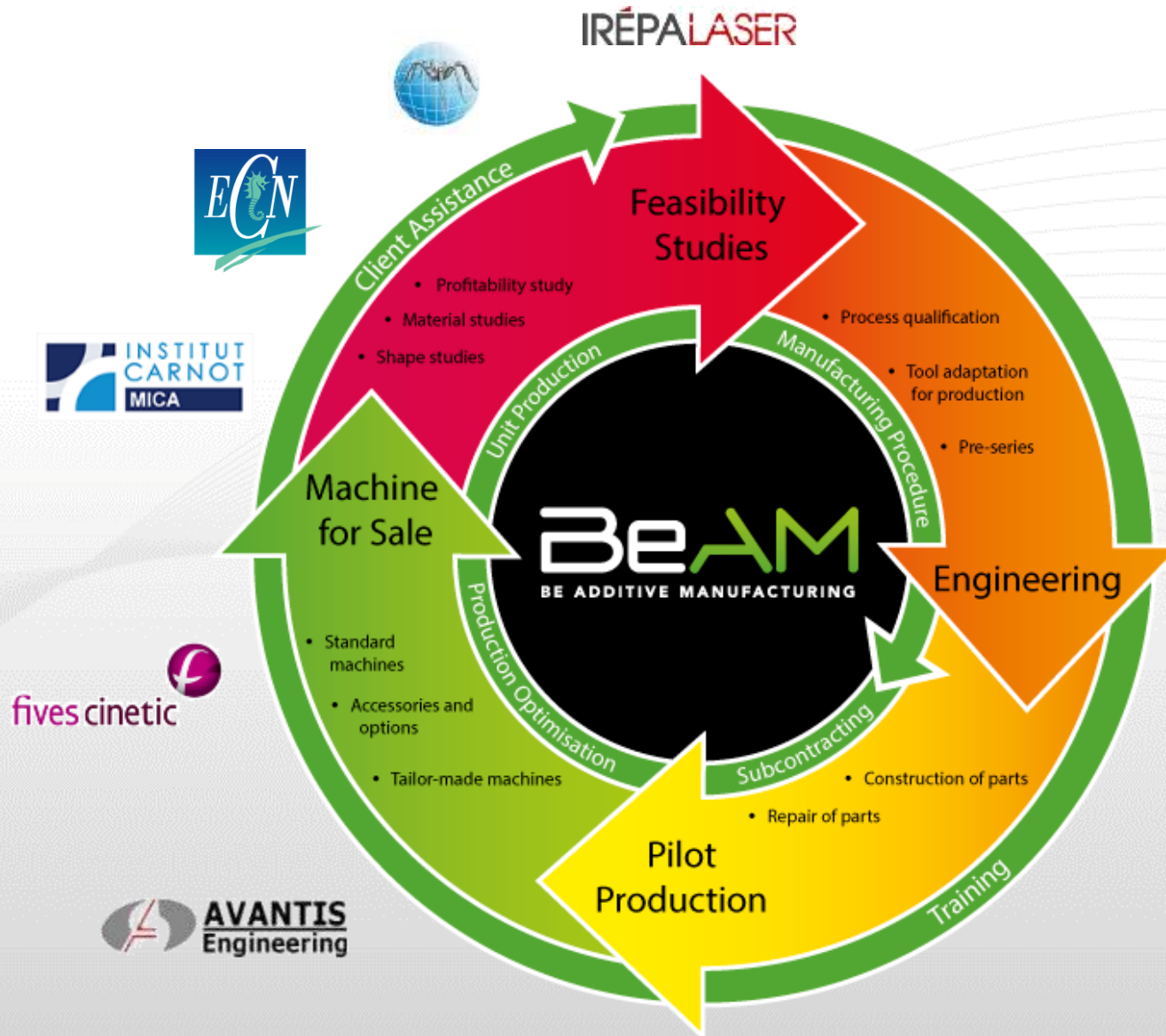


Specific options

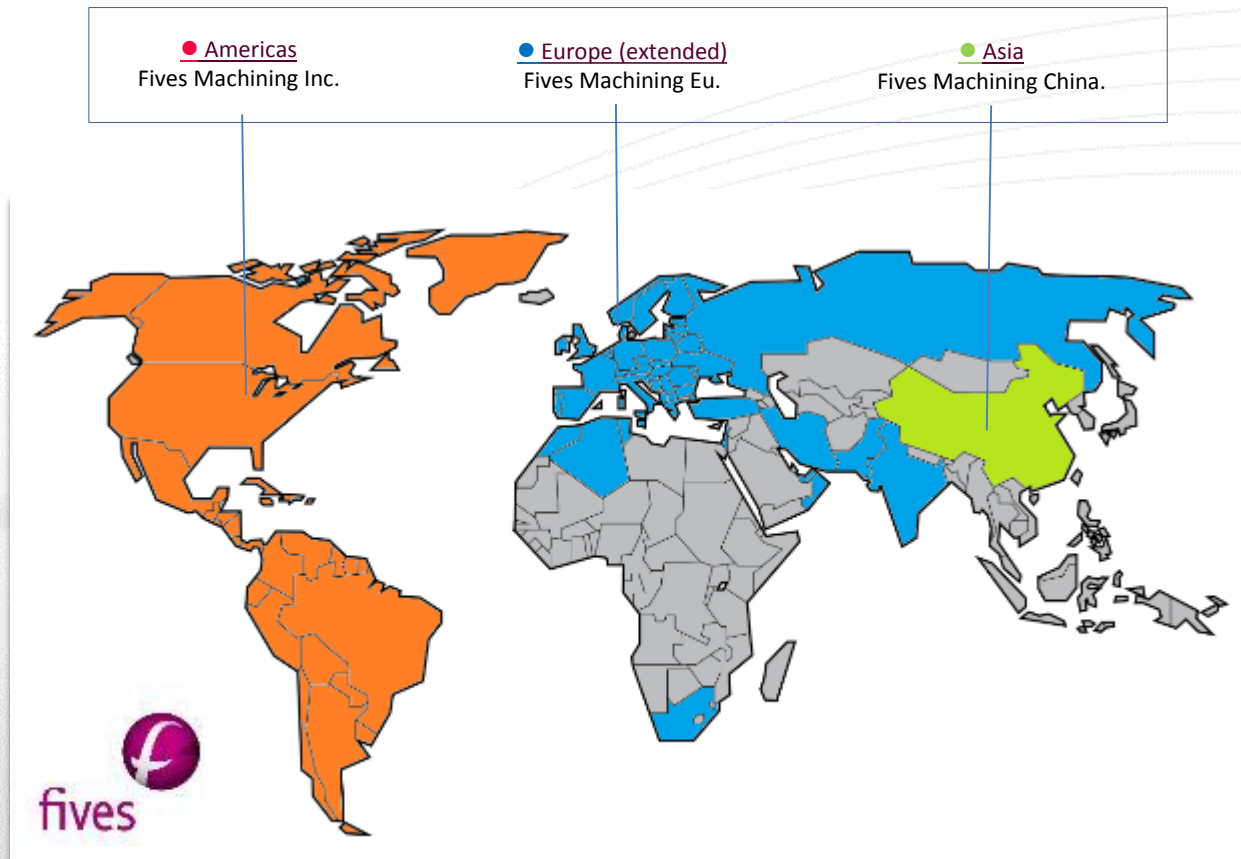
Specialized machines



A solution-oriented offer



Sales forces - Worldwide overview 2015



N. America

1 Director of Sales

10 Regional Sales
Managers

22 Agents

Fives Offices West

Fives Mexico

Fives Brazil

Fives Offices East

Fives Russia

Fives China

Fives Middle East

Fives Turkey

Fives Africa

« Extended » Europe – Sales force 2015



● UK
1 regional sales

● Germany
1 regional sales

● East & Centre Europe
2 regional sales
Belgium
Holland
Austria
Swiss
Czech Rep
Poland
Ex Yugoslavia
Bulgaria
Romania

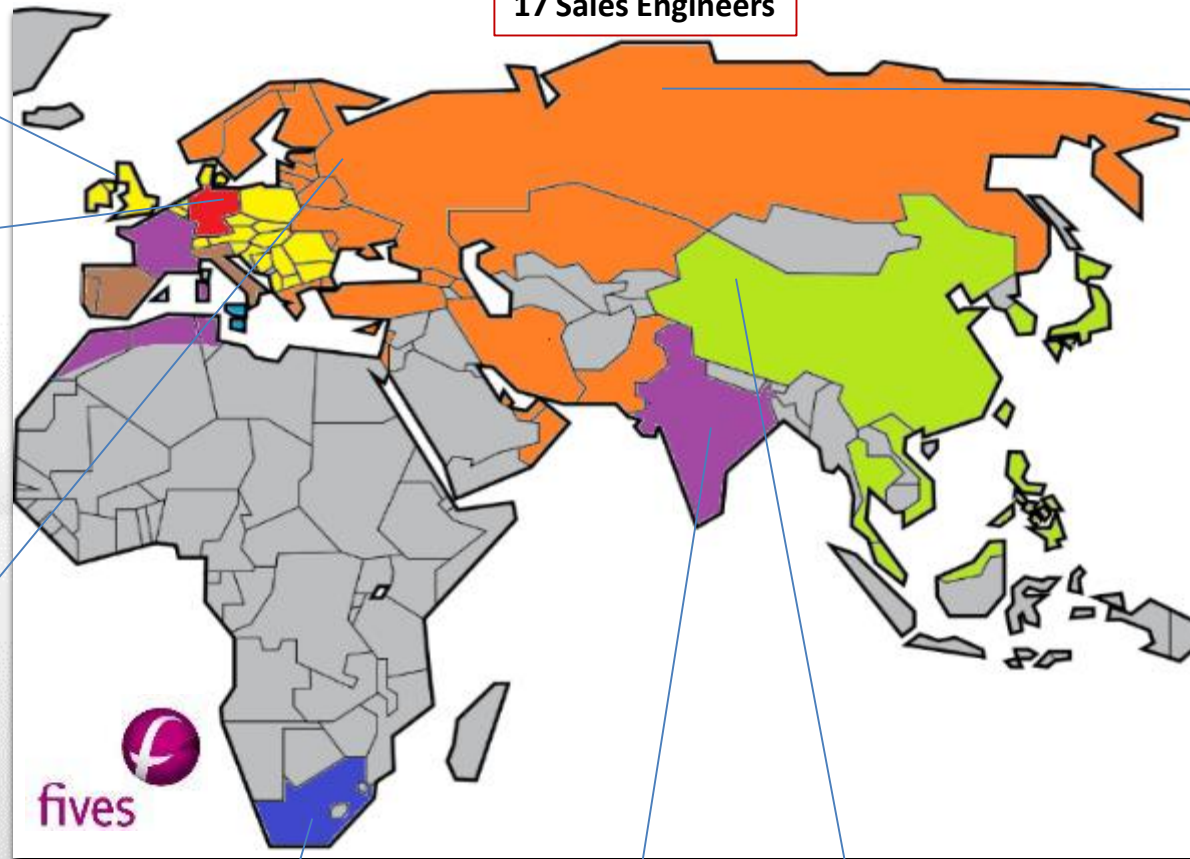
● South Africa
1 regional sales

17 Sales Engineers

● India
1 regional sales

● Asia
2 regional sales

● Russia
2 regional sales
Russia
Ukraine
Estonia
Lithuania
Latvia
Turkey
Greece
Israel
Sweden, Norway, Finland
Iran, EAU



Global Services

Fives Machining Systems, Inc.



- Single source for **optimized plant operations**
- Only source for **OEM parts**

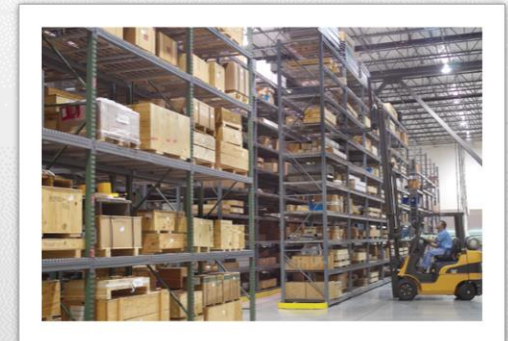
24/7 service from central warehouse
186 factory-trained support staff
Online parts ordering
Support for over 50,000 installations



Preventive maintenance



Service



Parts





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Questions/Answers



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