



UKAD

Saint-Georges-de-Mons

AUBERT&DUVAL



UKAD is a Joint-venture which combines, in the titanium market, the forces of 2 companies :

➤ **UKTMP**

➤ **Aubert & Duval**

And builds up an integrated group, which will be one of the world leaders in its field.



- Combination of complex and sensitive processes
- The quality of the ore is, of course, very important
- There are 3 main steps :
 - Ore to sponge
 - Sponge to Ingot
 - Ingot to billet /bars/sheets/ wire



- Created 1956; 2700 employees; Sales = 140 Mn \$
- Second world wide sponge titanium producer. Best quality on market.
- Fully integrated upstream with its own mine



AUBERT&DUVAL



Titanium Slag Production

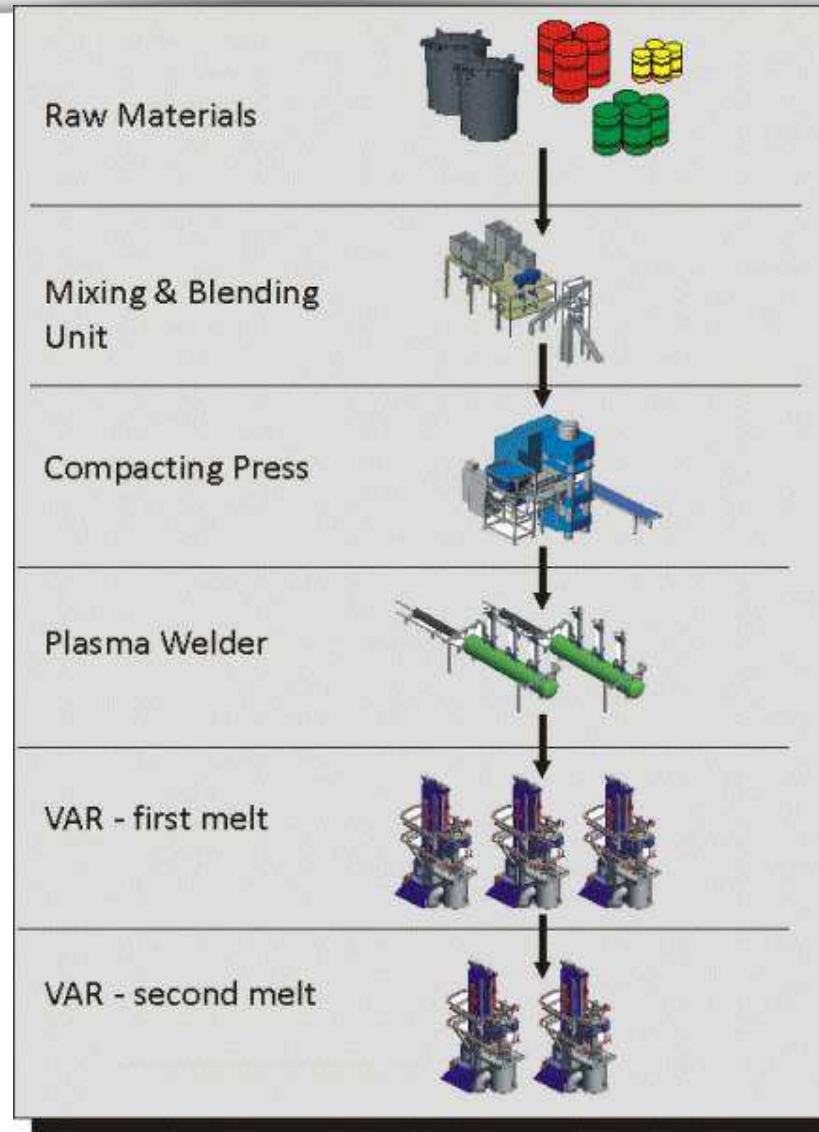


AUBERT&DUVAL



Titanium Sponge Crushing, Screening, Quality Control, and Packing





AUBERT&DUVAL



Plasma welding compaction press





AUBERT&DUVAL



VAR furnaces
control room

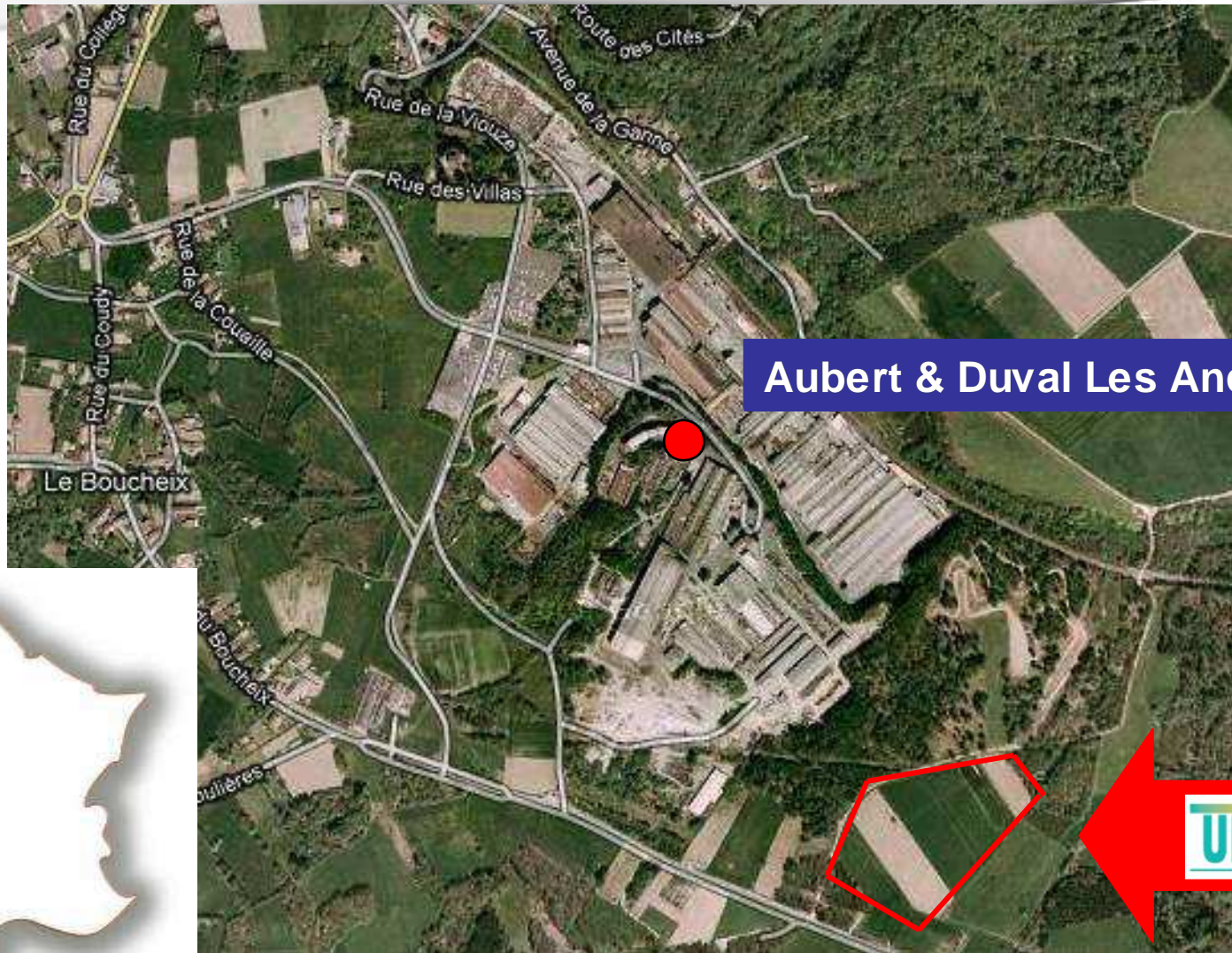


AUBERT&DUVAL

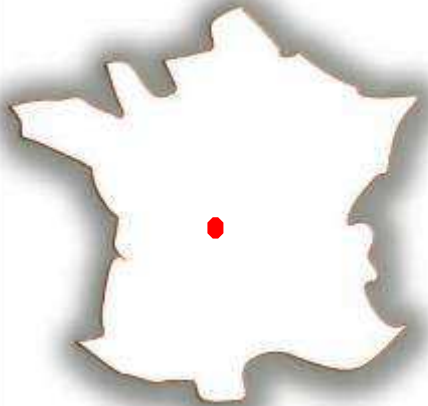


One of the first ingot





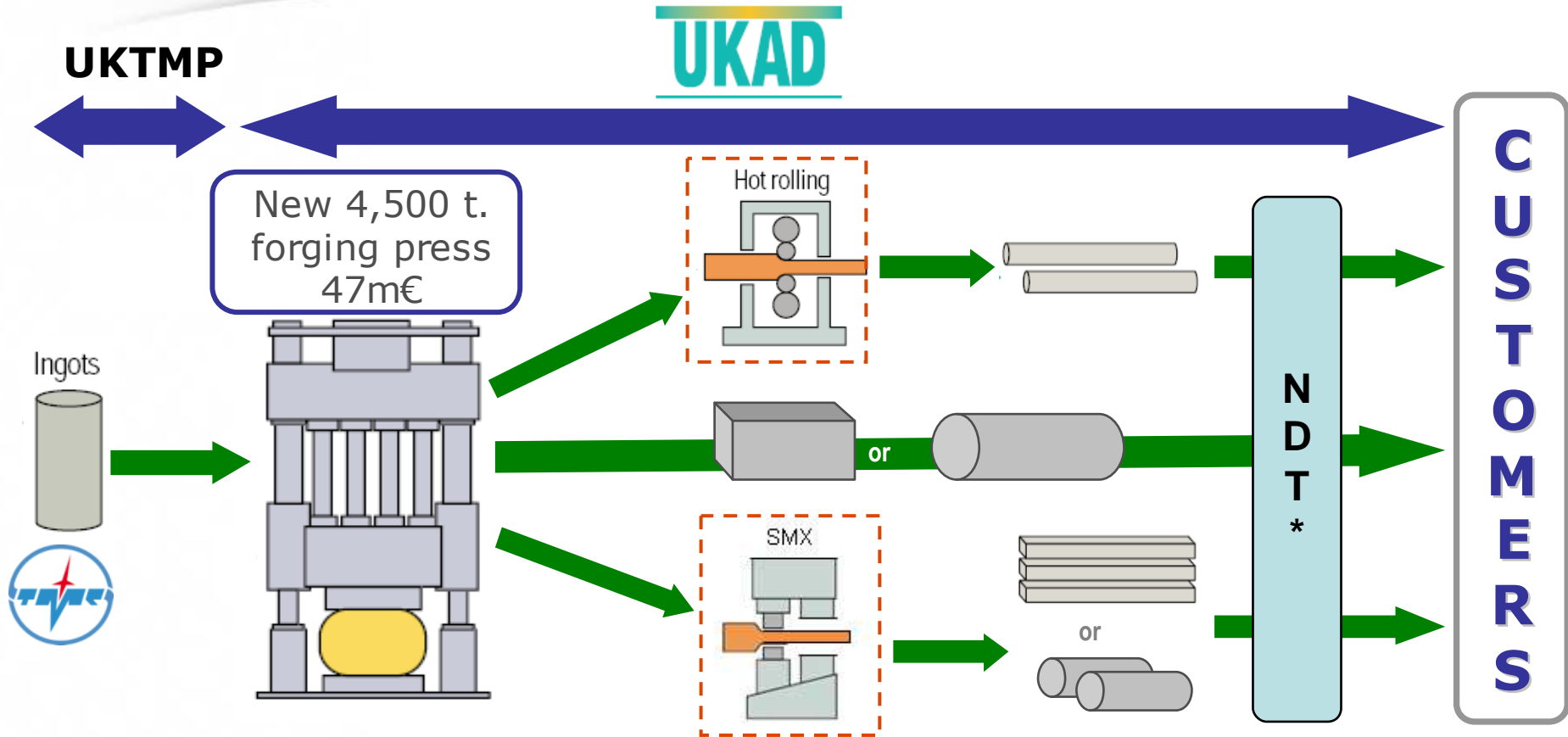
Aubert & Duval Les Ancizes



- **UKAD is a forging unit, equipped with a fast 4,500 T press. Operations**
 - **Conversion of titanium ingots from UKTMP :**
 - Long products, bars,
 - Wires, sheets, plates,...
 - **Forging of Ni super-alloys**

- **UKAD will forge ingots from 7 to 18 t, in bars from 200 to 450 mm in Ø, and 4 to 6 m long.**





➔ **UKAD will forge :**

- Ingots from 7 to 18t.
- Bars from 85 to 450 mm in Ø and 4 to 6m long

Operations subcontracted to Aubert & Duval



*Non destructive tests (automatic multi-element ultrasonic)

← 26 months →



engineering

Detailed design
5 months

CONSTRUCTION

Lean Design
3 months

Lean Organization
3 months

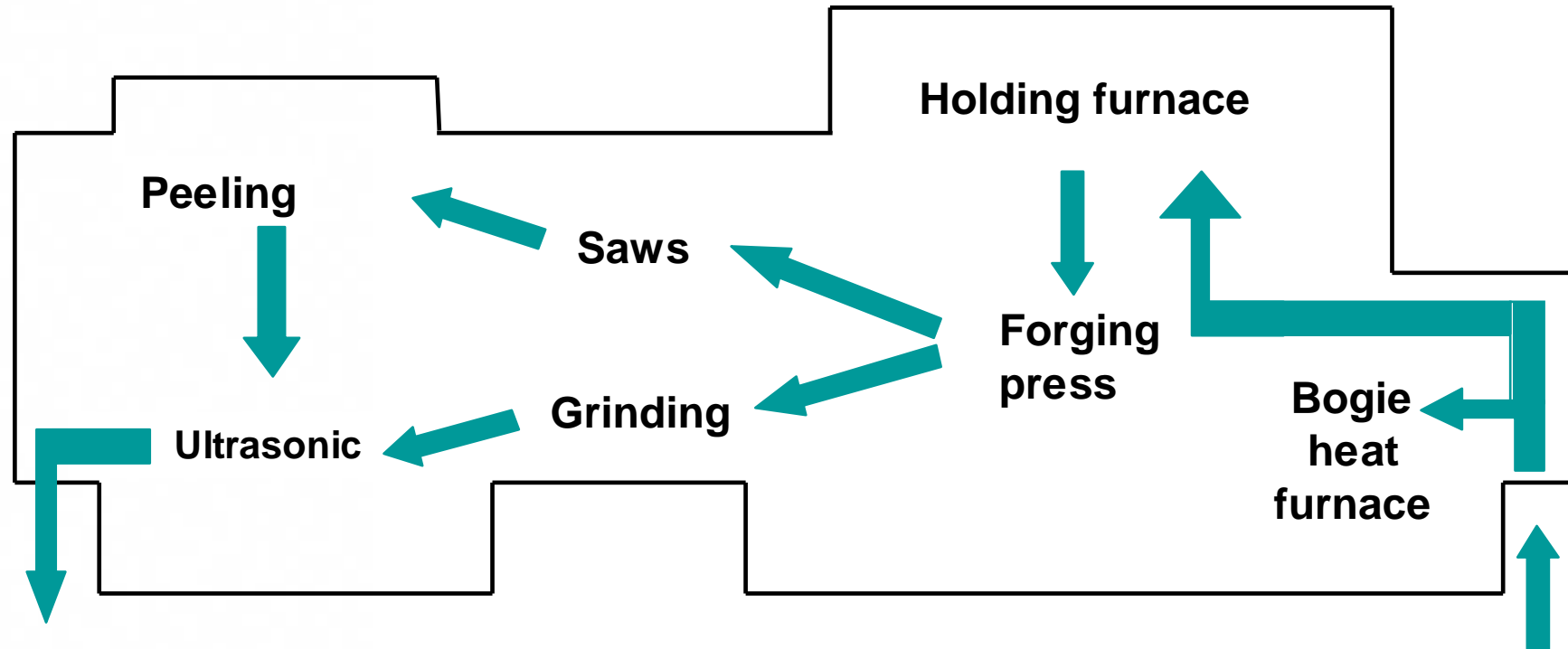
Lean Production
3 months



- A simplified flow
 - Number of operations reduced by 30 %
- A short production cycle
 - **between 2,5 to 5 weeks**
- Simple, customers oriented organization,
 - **Supply Chain team**
 - **Technical / Methods / Quality team**
- A design in **3 steps** following market growth

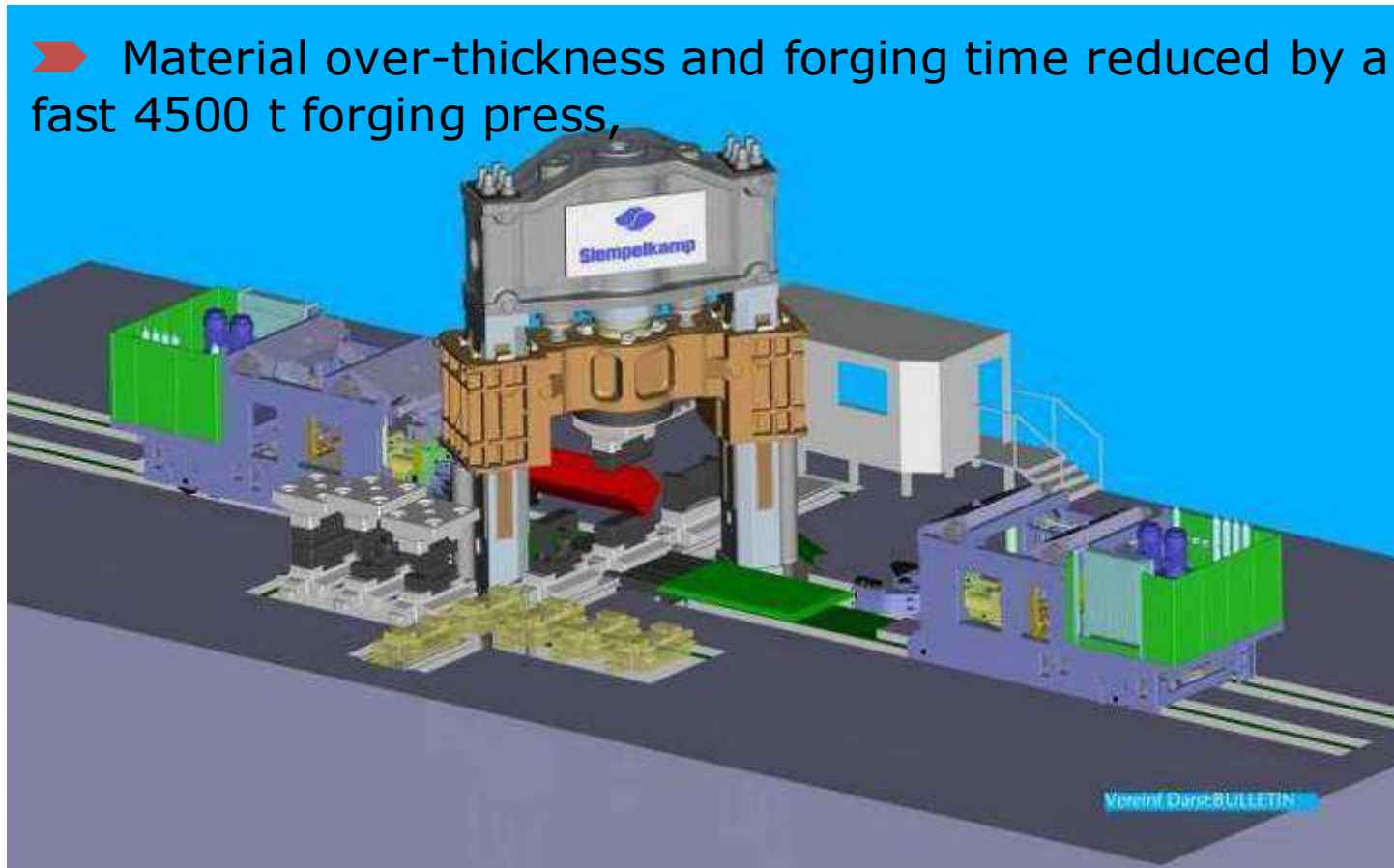
- 8 months of study - 30 working shop
- 60 experts involved- 5 800 engineering hours





Best technologies and practices integrated from benchmark
(USA, Areva, A&D Pamiers)

➤ Material over-thickness and forging time reduced by a fast 4500 t forging press,



- **Investments : 47 M€**
- **Surface area : 51 000 m²**
- **(7 500 m² indoors in phase 1)**
- **Creation of about sixty jobs**









End August 2010 situation

AUBERT & DUVAL
UKAD 







AUBERT&DUVAL



First hot test mai 2011



25 mai 2011



AUBERT&DUVAL



Press june 2011



Peeling machine



Grinding device



UT Control



AUBERT&DUVAL



