

Set Up of UKAD

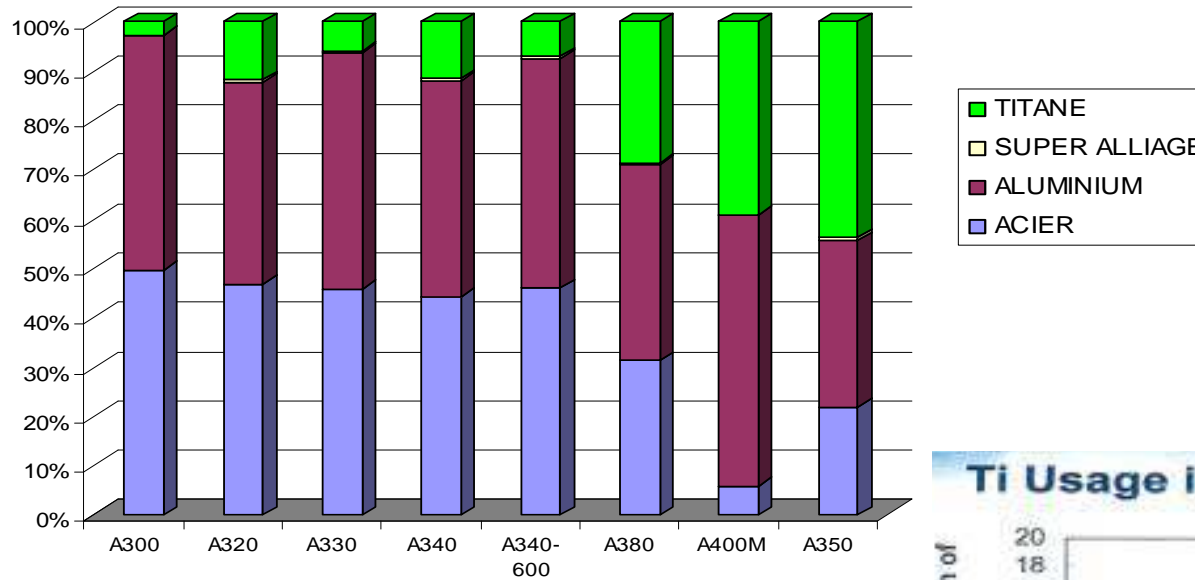
Les Ancizes

AUBERT&DUVAL



WHY UKAD

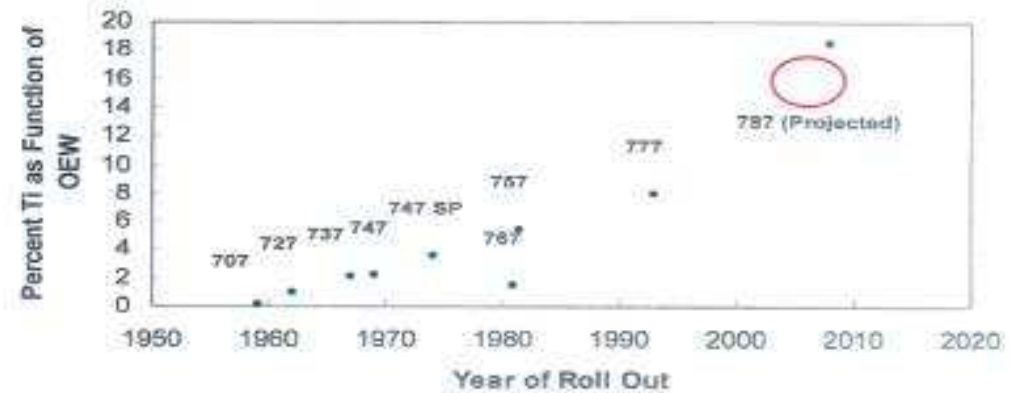
Répartition des Matériaux Matricés par Avion (en volume)



Airbus

Boeing

Ti Usage in Aircraft Has Been Increasing



• Military Aircraft 9% (F-4) to 35% on Current Aircraft



SPONGE, INGOTS, BILLETS, CLOSED DIE FORGINGS

| SOCIETE | PAYS | EPONGE | | LINGOTS | | BILLETES | MATRICES |
|------------------|-------------------|---------|---------|---------|---------|----------|----------|
| | | KT 2005 | KT 2010 | KT 2005 | KT 2010 | | |
| VSMPO-AVISMA | RUSSIE | 28 | 42 | 24 | 35 | | |
| UKTMP | KAZAKHSTAN | 22 | 24 | 0 | 10 | | |
| UKAD | | | | | | | |
| AD | France | | | | | | |
| TOHO | JAPON | 15 | 16 | 9 | 19 | | |
| SUMITOMO | JAPON | 20 | 24 | 5 | 5 | | |
| TIMET | USA/UK/France | 9 | 13 | 44 | 53 | | |
| ALLEGHENY+ UNITI | USA | 0 | 5 | 33 | 38 | | |
| WYMAN | USA | | | | | | |
| LADISH | USA | | | | | | |
| FUCHS | Allemagne | | | | | | |
| ZUN YI | CHINE | 7 | 20 | | | | |
| FUSHUN | CHINE | 2 | 8 | | | | |
| AUTRES | CHINE | 8 | 28 | | | | |
| BAOTI | CHINE | | | 5 | 12 | | |
| SHANGHAI N°5 | CHINE | | | 5 | 10 | | |
| AUTRES | CHINE | | | 10 | 20 | | |
| AUTRES | | | | 12 | 12 | | |

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ABOUT UKTMP

- **The company UKTMP (UST-KAMENOGORSK TITANIUM AND MAGNESIUM PLANT JSC) is registered company in Kazakhstan.**
- **UKTMP's business is mining of Titanium ore and processing it into sponge.**
- **This company also produces magnesium.**
- **UKTMP is investing in compaction and remelting equipments in order to supply ingots of titanium alloys by the end of 2010.**
- **Company created in 1956**
- **2700 people**
- **Yearly turnover : 140 millions \$**
- **Second world producer in titanium sponge**



MAIN TITANIUM SPONGE PRODUCTION STAGES



Titanium Ingot and Alloy Plant Project : Process of charge mixing and compacting



Mixing and blending unit

Compacting press



Titanium Ingot and Alloy Plant Project :

Electrode plasma welding and melting in vacuum arc re-melting furnace



Plasma welder



VAR furnace ▾

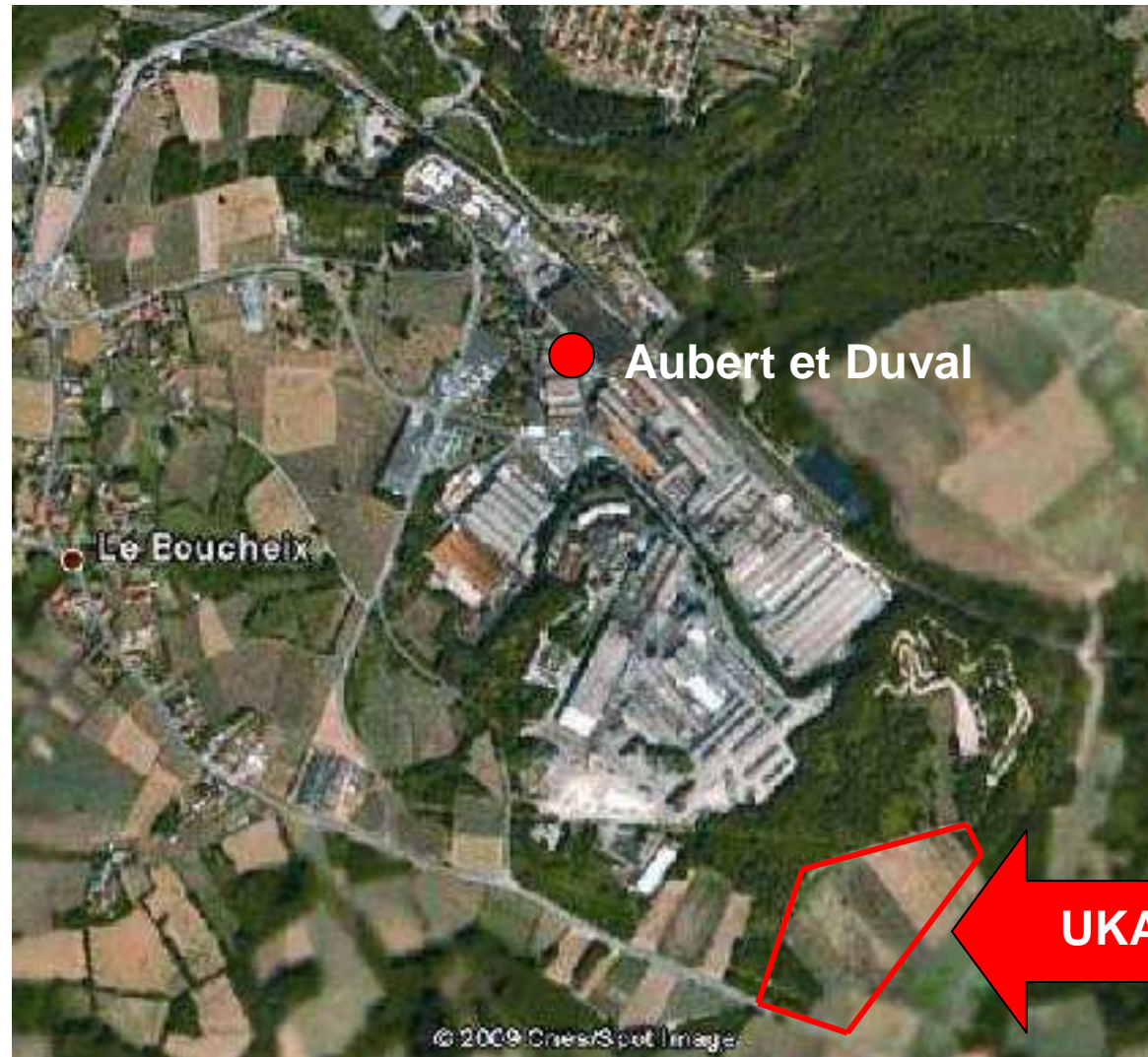
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ABOUT UKAD

- **50/50 Joint Venture between**
 - ARDOR HOLDING, commercial partner of UKTMP
 - AUBERT & DUVAL
- 2005 : **First order from AD to UKTMP**
- January 2006 : **First talks about the partnership**
- 08/02/2008 : **Signed Memorandum of Understanding with EADS Airbus**
- 24/12/2008 : **Creation of the UKAD company**





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- **Conversion of titanium ingots from UKTMP :**
 - Long products, bars,
 - Wires, sheets, plates,...

- **Supplying the markets :**
 - Aeronautics
 - Energy
 - Defence
 - Medical...

- **Contract signed with EADS Airbus to supply billets and bars until 2020**



- **Heating furnaces**
- **A 4500-ton forging press with integrated manipulators for fast forging, 6000 ton for up-setting**
- **Heat Treatment Furnaces**
- **Peeling, sawing equipments**
- **Non Destructive Testing Equipments**

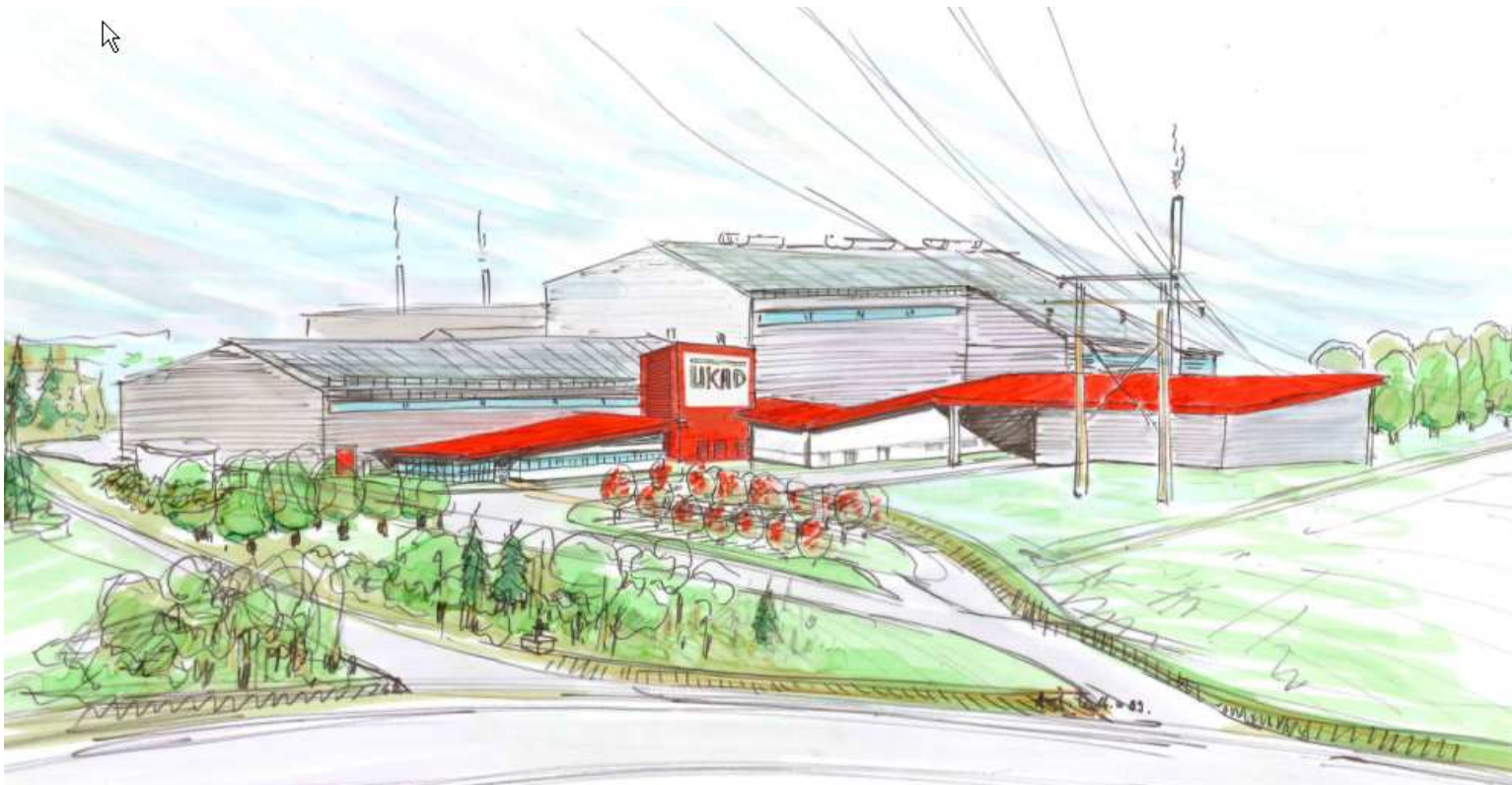
After the implementation of the equipments, the unit will be submitted to a 4 to 6 months period of qualification by the customers.

- **Investments : 47 M€**
- **Surface area : 40 000 m² (9 000 m² indoors)**
- **Creation of about sixty jobs**





Overview





- **Construction of the plant in process.**
- **Production of 1st billet : September 2011.**
- **Production capacity : 12 to 15 000 tones.**