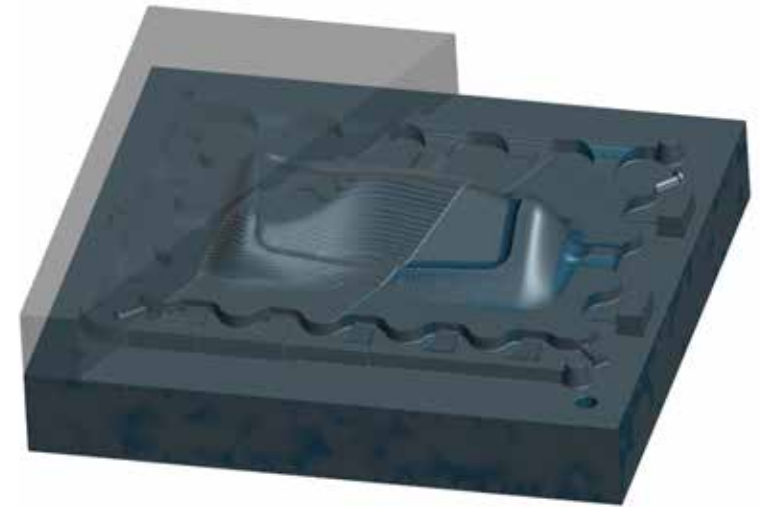
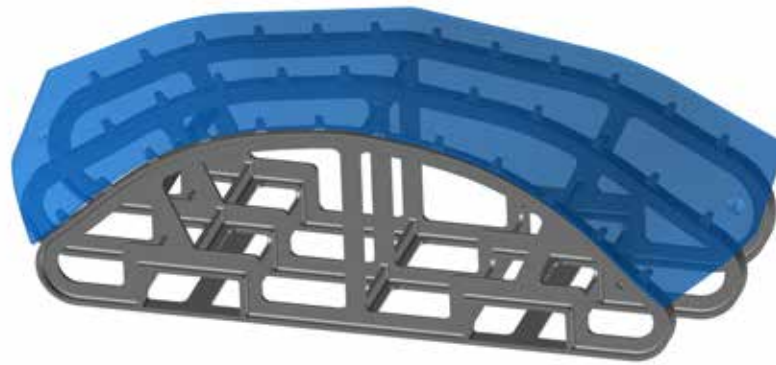




# INNOVATIVE CASTING SOLUTIONS

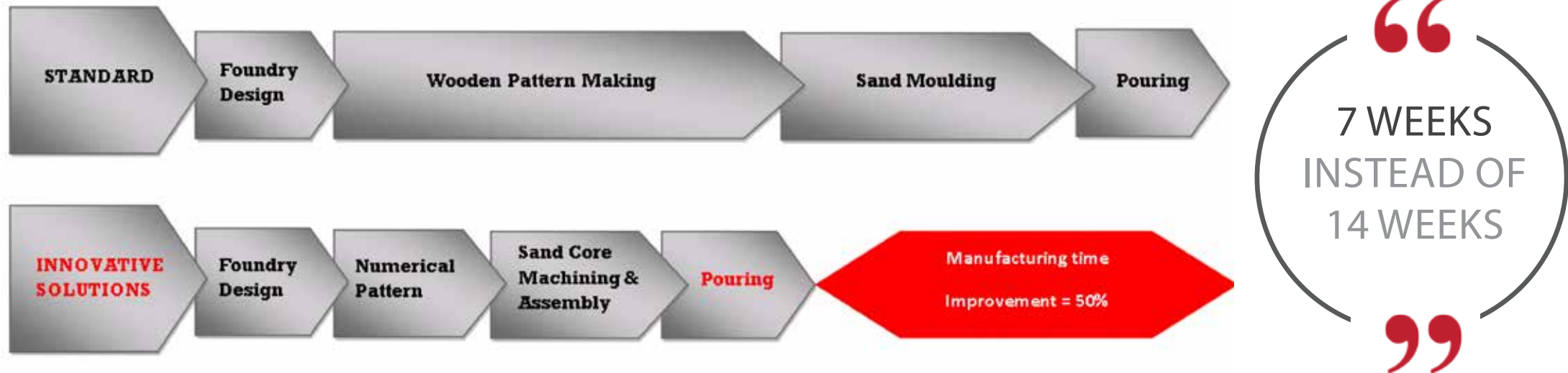




## CUSTOMER CHALLENGES

Our customers need to find a way to reduce cost when asking for prototyping, or unitary manufacturing of cast components. In many cases, pattern costs could represent half the price of the cast part.

## LEAD TIME COMPARISON



- + No need to wait for long time delivery for patterns.
- + Perfect manufacturing process for quick delivery of pre-production or proof of concept.

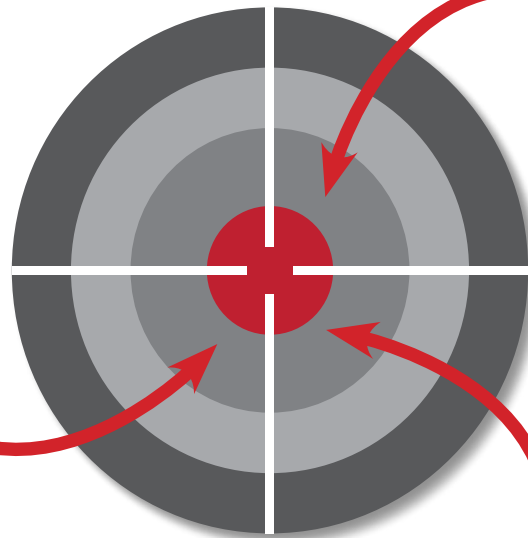
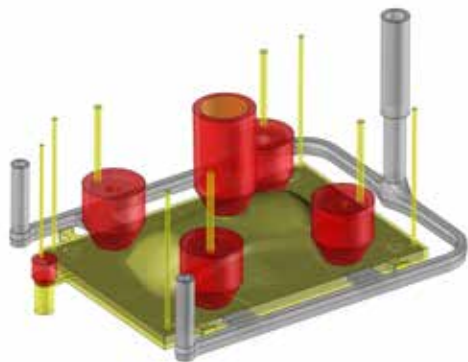
REASONS FOR USING INNOVATIVE CASTING SOLUTIONS



# YOUR PROJECT

## CASTING DESIGN

- Complex shape casting
- Thin wall thicknesses
- Tight tolerances on the as cast features



## LEADTIME

- Prototype or unitary casting
- Shorter delivery time



## PATTERN

- Numerical chain
- Cost & complexity
- No pattern storage



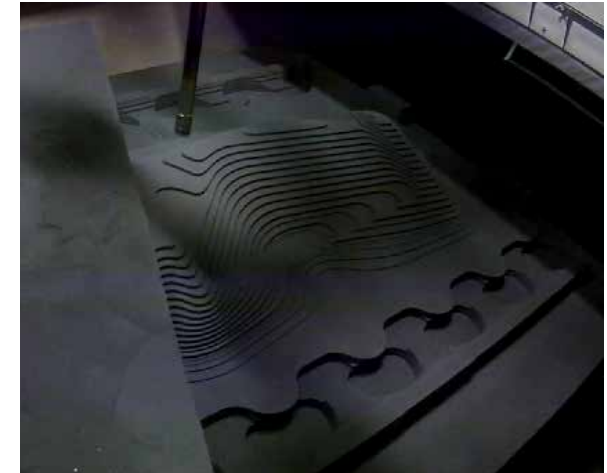
▷ RAPID INNOVATIVE CASTING SOLUTION MEANS

▷ **FASTFORM®**

*Rapid prototyping on sand mold  
(patternless process)*



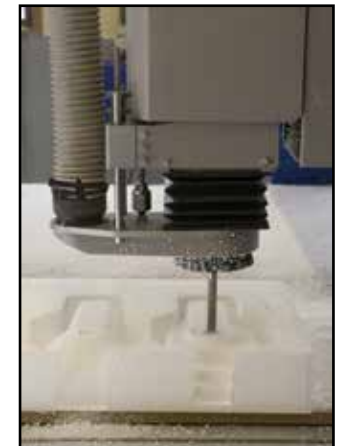
- + Sand Milling on 5 axis machine
  - + Machined sand cores are re-positionned with very high accuracy
  - + Complex shapes are produced with almost no limit in size
- (10 tons sand cores, several cores possible)



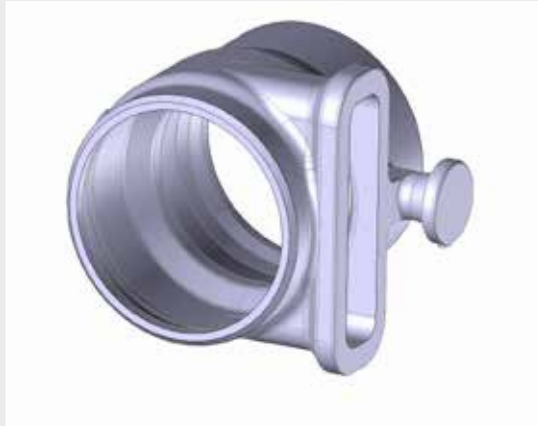
▷ **STRATO CONCEPT**

*Rapid prototyping on polystyrene pattern  
(Valid for 1 mould, up to 4 moulds)  
No limit in size as pieces are assembled together*

**Stratoconception®**  
digital prototyping solutions **CIRTS** France



▷ MANUFACTURING PROCESS



1 - Numerical Chain



2 - Sand block rough milling operation



3 - Sand block final milling operation

5 - Machined sand cores  
moulding operation set up



6 - Pouring



7 - Rough casting



▶ EXAMPLES OF PARTS



9 meter Invar® mould



Hot Forming



Planet gear carrier for CANeflex®



Engine tooling *Rolls Royce BR700NG*

Francis Runner

Acoustic pannel segment

Fan support

Satellite interface



### ENGINEERING

Technical study & advice  
CAD, CAM & FE analysis softwares

Design & Conception  
Transformation from fabricated to as cast  
Foundry shapes optimization

Research & Development  
Prototyping  
Material patented  
250kg R&D dedicated furnace



### INSPECTION & ANALYSIS

Inspection capabilities  
All NDT, MG, US, X-Ray

Fully equipped internal lab  
Spectrometer, Microscope,  
Creep testing machine

ISO Certifications  
9001, 14001, 18001 & 50001

### PRODUCTION

All cast irons & Cast steel Grades  
Grey & Ductile Irons / Super & Super  
Duplex steel

Heat Treatment  
Up to 15x5x4m // 1150°C

Welding  
MIG, TIG, Arc & Automatic welding

Fettling  
Mechanical  
& fully automatized grinding



NF EN ISO/CEI  
17025

A Groupe CIF Company



February 2018



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