

## STRESS TOOLS DEVELOPMENT

### INTRODUCTION

ICEMM has developed a philosophy of working which consist in trying to automatize every repetitive process of calculation. The result of that is a lot of high quality and fast stress tools which allow repeat calculations using small amount of engineering time. These tools covers typical actions that stress engineers do every day (pre-post processing, connections with servers, free body loads calculations, interaction with official stress tools, etc.)

### COMPLETED PROJECT

Client: ICEMM R&D

- Pre and Post Processing tools for Finite Element Software (Nastran and Abaqus).
- Fast interaction with Airbus official Tool ISAMI (Pre-processing, connection, post-processing) for Static and Fatigue Modules.
- Automatic analytic calculations.
- Improvement of clients' software (parallelization, fast performance, friendly interface, high quality code, etc.)

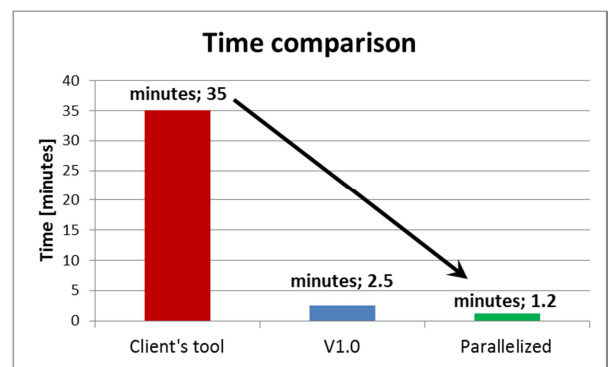


Figure 1. Improvement time in client's tool

### COMPLETED ACTIVITIES

- Identification of process to be automatized.
- Weak points of process (waste time, speed, repeatability, etc.).
- Selection of best platform or language to be programmed and design of a solution for tool.
- Programming of the tool.
- Checking, validation and documentation.
- Future improvements of the tool and new capabilities.

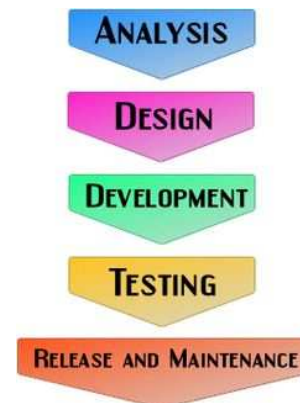


Figure 2. Stress Tool Development Activities

### TECHNOLOGY

The tools are programming in different languages, depends on the best solution for each kind of problem. Typical languages used in the Stress Tools are Fortran, Python, C#, Visual Basic, PCL (Patran).