



UNIÃO EUROPEIA  
Fundo Europeu  
de Desenvolvimento Regional

**Designação do projeto** | DeltaC&P – “Uncertainty in Cutting and Packing Problems: Robust Planning and Optimized Replanning in Manufacturing and Transportation”

**Código do projeto** | POCI-01-0145-FEDER-029609 (PTDC/EME-SIS/29609/2017)

**Objetivo principal** | Explicitly taking into account uncertainty, when solving cutting and packing problems with optimization techniques, by applying advanced techniques (based on mathematical programming models, metaheuristics and their hybridization), bringing algorithms closer to real-world needs.

**Região de intervenção** | Norte

**Entidade beneficiária** | INESC TEC - Instituto de Engenharia de Sistemas e Computadores,

**Data de aprovação** | 24-04-2018

**Data de início** | 26-07-2018

**Data de conclusão** | 25-07-2022

**Custo total elegível** | 220.218,25

**Apoio financeiro da União Europeia** | FEDER:187.185,51

**Apoio financeiro público nacional/regional** | 33.032,74

The DeltaC&P project aims at studying three different, and frequent in practice, types of Cutting and Packing problems under specific conditions of uncertainty, occurring in real-world industries and services:

- 1) Multi-period one-dimensional cutting stock problem with uncertainty on the future period's demand, as arising in the paper, metal or wooden profiles industries.
- 2) Two-dimensional cutting problem with uncertainty on the raw-material, as it happens in the textile and garment industries where fabric defects along dozens or hundreds of meters make unfeasible the previously planned cutting patterns.
- 3) Three-dimensional packing problems with uncertainty on the dimensions of the boxes to pack and on the delivery/availability data, as it occurs in the transportation sector where trucks or containers are to be loaded with boxes, and the dimensions of the actual items to load and the arrival date to the warehouse do not match the dimensions previously declared by customers.

Up to September 2020, the project results originated 3 journal articles, 2 conference papers, 5 talks in conferences, 1 PhD thesis and 1 MSc dissertation. The project organised the “1º Workshop do Projeto Delta C&P”, São Carlos, SP, Brazil, 10 de maio de 2009.