

LTR25 MILITARY RADAR

INTRODUCTION

ICEMM has participated in the calculation of the LTR25 military radar, the new product in the Lanza's family, in compliance to the client's requirements. The project consisted of several stages. First, a preliminary analysis was carried out to optimize the design and provide an initial size of the structure. Then, additional analyses and detailed models were used to ensure structure' strength when subject to different load cases including wind, snow, gravity, ice, blast, crash landing, impacts, PSD, etc.

OPEN PROJECT

Client: INDRA

Date: 2012-Present

- Analytic calculations and global and detailed FEMs of LTR25 military radar.



Source: INDRA Lanza brochure and ICEMM FEMs

Figure 1. FEMs and real Lanza family radars

COMPLETED ACTIVITIES

- Detailed FEM modifications in Abaqus.
- Fatigue analyses in critical components.
- Static analyses: crash landing specifications for air transportation, operation and survivability conditions.
- Dynamic analyses: impacts during transport or structure handling.
- Bolted joints static analyses: bolted joints were calculated in compliance to EuroCode3.
- PSD analysis.
- Buckling analysis.
- Column lifting analysis from transport to operation configurations.
- Documentation.

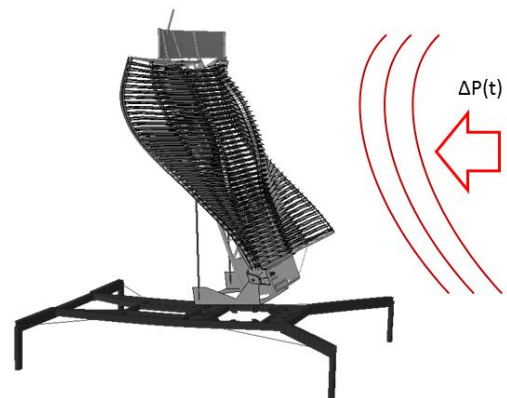


Figure 2. LTR25 subject to blast

TECHNOLOGY

Project has been analyzed with hand methods, by means of Excel sheets, based on EC3 and CTE methodologies for joints design and wind loads calculations. Finite Element problem resolution and results post-processing were performed using Abaqus CAE software.

- Strength and Stability/Buckling analyses .
- Static Linear analysis.
- Dynamic analysis: impacts and blast.
- PSD analysis.
- Design optimization.