CALDINTAV

High speed. Software for the dynamic analysis of high-speed railway bridges.

Contact information

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Technological Offers type

Technological solutions

Research and innovation areas

- Industry, Materials and Circular Economy
- Security, Defense and Disaster-Resilience

ODS

Where?

Computational Mechanics Group RESEARCH CENTRE STRUCTURAL MATERIALS (CIME)

Keywords: | railway | transport

Brief description of the solution and the added value it delivers

Caldintav fulfils the need for a dynamic tool capable of analysing a large number of cases in a short space of time, which arises when

studying solutions for a construction project and when managing existing infrastructures throughout their useful lives. Its main characteristics are its speed and ease of use. As well as being a useful tool for civil engineering companies and infrastructure managers, it is of great interest in the field of research. It has been used in research projects in collaboration with both national and European authorities and with other European research groups.

Description of the technological basis

Caldintav is a software solution for the dynamic analysis of high-speed railway bridges. It makes it possible to analyse a large number of cases in a very short space of time, which is key when studying solutions for construction projects and managing existing bridges.

It is much faster than commercial finite-element programs, both in terms of calculation time and the amount of time taken to define the model. Plus, thanks to its graphical interface, there is no need to be an expert on the subject to use it.

'Its calculation speed and its graphical interface allow the user to save a great deal of time, without needing to be a specialist in the subject'

Business needs / application

- Growing importance of dynamic effects on high-speed railway bridges.
- Increase in the number of high-speed railway lines and in the adaptation of conventional lines.
- Interoperability of European railway network infrastructure.
- Need for a dynamic tool capable of analysing a large number of cases quickly when studying solutions for a construction project and managing existing bridges.

'This tool is able to analyse the dynamic behaviour of a large number of bridges very quickly'

Competitive advantages

- Much faster than current commercial finite-element programs (50 times faster). This allows a great many cases to be analysed in a short space of time, meaning increased efficiency for the client.
- Very easy to use thanks to its graphical interface.

References

The tool has been used in research projects in collaboration with the Spanish Railway Safety Agency, Adif (the Spanish railway infrastructure manager), the European Railway Agency (ERA) and European legislation drafting groups.

Industrial protection

Registered software: M-002574/2018.

Stage of development

- Concept
- Research
- **Lab prototype**
- Industrial prototype
- Production

Contact

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Innovation and Entrepreneurship Programmes

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