Objective

Bridges, like many Civil Engineering products, are designed quite conservatively. For older bridges, this conservatism is very expensive – there is a great difference between the cost of strengthening an existing bridge and not doing so. Very often it is possible to prove that a bridge is perfectly safe even when it is old and has deteriorated since it was first built. Sometimes the deterioration is in a non-critical part of the bridge and very often the bridge has a lot of reserve capacity to take load that was not accounted for when it was first designed.

The project leader, ROD, is involved in research at the leading edge of bridge assessment and its staff have published in the best journals in the world. Nevertheless, to achieve its ambitions of expanding aggressively in the world bridge assessment market, ROD needs to develop new techniques that are better than anything available worldwide. It will achieve this by working with Professor Sørensen of Aalborg University, the best expert in the world today in the quantification of structural risk and Professor Karoumi of KTH in Sweden who has worked extensively on the monitoring of railway bridges.

Phimeca is an established SME specialising in Uncertainty Engineering. It is well established in France and works particularly in the nuclear industry and more recently in several other fields such as defence and space. Phimeca is also working increasingly in Civil Engineering and wishes to expand its market base, particularly internationally, by applying its expertise in risk analysis to the bridge assessment industry. By working with Aalborg University, it will develop its ability to assess steel bridges at risk of fatigue damage (fatigue damage is a particular expertise of Phimeca). The new techniques that will be developed in Long Life Bridges will have no equivalents in the world today and will give Phimeca the Unique Selling Point that it needs to win work in the world bridge market.

Related information

Result In Brief
State-of-the-art assessment models to extend the lifetime of bridges

Report Summaries
Final Report Summary - LONG LIFE BRIDGES (Long Life Bridges)
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Subjects

Industrial Manufacture

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