

## **Impact**

The focus of this Special issue of Electronic Journal of Structural Engineering is on the health monitoring and assessment of structural systems making a part of linear infrastructure. The manuscripts present research outcomes on modern capabilities in monitoring, assessment and analysis of structural systems ranging from buildings, sea port structures, aging of pipelines to dynamic performance rail vehicles contributing to the Australia Indonesia Centre – Infrastructure Cluster.

Transportation to and from seaports were identified as a critical link for local and international network which play a vital role in economic activity of both Australian and Indonesia. In the years ahead, international trades through sea transportation will be the most common mode compared to other modes such as trades through land and air. Hence, their reliability, efficiency, disaster preparedness and recovery are crucial for the regional and national economy. It is well known that downtime of the seaports, oil and gas pipelines due to an extreme event such as an earthquake can result in a significant economic loss. In view of importance of integrated transportation networks towards the national economy, the need to assess the performance of these systems was identified by the research cluster.

Port structures are exposed to marine environments and can rapidly deteriorate if not properly maintained. In a similar way, pipelines may fail after a period of service time due to structural deterioration and ageing. Recent advances and methods in diagnostic technology which facilitates structural health assessment are mostly not incorporated in the guidelines. The outcomes of the research presented in this Special Issue has the potential to contribute to guidelines for assessment and design procedures of port structures, to develop innovative retrofitting, strengthening and maintenance strategies for port structures. The case studies presented will contribute towards the AIC-Infrastructure Cluster research objectives by increasing the reliability and efficiency of port operation and enhance the resilience of structures to extreme events.

[Professor Abbas Rajabifard](#)

Head of Department, Infrastructure Engineering Department, Melbourne University  
Director, Centre for Disaster Management and Public Safety