



A CONCEPT SELECTION OF STRAIT- CROSSING SYSTEMS: A CASE IN SUNDA STRAIT

Daniel Mohammad Rosyid

Department of Ocean Engineering
ITS Surabaya
Email: dmrosyid@oe.its.ac.id

ABSTRACT

Using a set of criteria, it can be shown that a strait-crossing bridge system is strictly inferior to a ferry system. From topology point of view, every single island is generally a concave landmass domain with gulfs and rivers. Concavity creates distance problem. However, connecting two perfectly convex domains creates a new concave domain. From techno-economic point of view, a bridge system provides a “rigid” solution that is prone to natural and financial shocks and uncertainties. A ferry system, on the contrary, provides a more adaptive and flexible solution, and therefore more cost-effective. A case study to provide a strait-crossing system in the Sunda Strait is presented.

Keywords: Concept selection, trait-crossing system, bridge, ferry, concave land mass domain, topology, techno-economic, the Sunda Strait