

Development of Risk-Based Standardized WBS (Work Breakdown Structure) of Stadium Main Building with Integrated Design-Build Contract for Cost and Time Planning

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Abstract

Nowadays, the implementation of stadium construction in Indonesia, either its new buildings or renovations, some of stadiums use an integrated design-build contract because it is considered better in terms of cost and time. However, the implementation of the stadium project with an integrated design-build contract has been built by the government still face with many problems such as schedule delays, variations of work that are not in line with the planning, cost overrun, claims, and disputes between owner, contractor, as well as the auditor. These problems occur because there are still many risks related to cost and time that have not been identified since the planning phase. Therefore, the aim of this study is to develop a risk-based standardized work breakdown structure (WBS) of stadium main building with integrated design-build contract for cost and time planning. The identification of risks that affect the planning of cost and time on stadium main building will be identified through an archive analysis of various related references that will be used for the development of the WBS stadium. The risk-based standardized WBS consists of the work package, method, activity, labor, material, and equipment resources. The analysis of the highest risk response that affects cost and time planning is conducted in order to prevent, reduce, or even eliminate potential events that can affect costs and time in the completion of the stadium project.

Keywords

WBS, Risk factor, Design-Build, Cost and Time Planning, Stadium

Biographies

Andias Mintocharjo is a master programme student from University of Indonesia majoring Construction Management, Department of Civil Engineering. He is working at Directorate General of Construction Development, Ministry of Public Works and Housing of The Republic of Indonesia. He concerns about construction resources supply chain management, lean construction, and also construction project delivery system especially design-build contract.

Anggoro Putro is a doctoral programme student from University of Indonesia majoring Construction Management, Department of Civil Engineering. He is working at Directorate General of Human Settlement, Ministry of Public Works and Housing of The Republic of Indonesia. He is very experienced in controlling and supervising the construction of stadiums and many national strategic projects in the field of human settlement programmes.

Yusuf Latief is a Professor at the Faculty of Engineering, University of Indonesia. He teaches for Undergraduate, Graduate and Doctoral Programs. He has published journal and conference papers with specification in the areas of Project Management and Construction. He has served as head of the management specialty association at the Faculty of Engineering, University of Indonesia.