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Date: Jumat, Desember 25, 2020

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THE WARSHIP ASSIGNMENT SCHEDULE USING INTEGERPROGRAMMING

MODELAhmadi¹, Benny Sukandari²,Agus Makhrowi³¹, ³Indonesian Naval Technology College,Bumimoro-Morokembangan, Surabaya 60187, Indonesia²Naval Command and Staff College Cipulir, Seskoal Jakarta, 12230, IndonesiaABSTRACTScheduling is an assignment activity that deals with constraints. A number of events can occur in a period of time and location so that objective functions as close as possible can be fulfilled.

In the hierarchy of decision making, scheduling is the last step before the start of an operation. Scheduling warship assignments in Kolinlamil are an interesting topic to discuss and find solutions to using mathematical methods. The process of the Kolinlamil warship assignment schedule was carried out to produce an annual shipbuilding schedule.

This process not only requires fast follow-up, but also requires systematic and rigorous steps. Where the assignmentschedule is a fairly complex combinatorial problem. While making the assignment schedule that is applied at this time is considered less accurate because it calculates the conventional method. The process of warship assignment schedule in this study usingthe Integer Programming model aims to obtain alternative scheduling operations.

The schedule observed was 13 warships in carrying out N operations for 1 year (52 weeks). This research begins with determining the decision variables and limitations that existing constraints. Hard constraints include: maintenance schedule, time and duration of each task, warship class assigned to the task and the number of executing warships per task.

While soft constraints are how long the warship performs its tasks in a row. The mathematical formulation of the Integer Programming model created consists of three indicator, one decision variables, two measuring parameters and five constraint functions. Furthermore, determining the best scheduling alternatives is completed using the Microsoft Exel Solver computing program. Keywords: Scheduling, Integer Programming, Solver.

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