ABSTRAK

Judul: *Quantity Take-Off* Berbasis BIM (*Building Information Modelling*) Pada Proyek Pengembangan Pelabuhan Patimban Paket 5 Untuk Meningkatkan Akurasi Perhitungan, Nama : Iklam Choeru Fadli, NIM : 41118320068, Dosen Pembimbing : Elhazri Hasdian, S.T., M.T., M.M., PMP, 2023.

BIM (*Building Information Modelling*) menjadi salah satu metode alternatif untuk efisiensi waktu dan keakuratan pengerjaan pada perhitungan volume pekerjaan. Dengan diterapkannya BIM untuk proses *quantity take-off* pada Proyek Pengembangan Pelabuhan Patimban Paket 5 ini diharapkan dapat meminimalisir beberapa kendala tersebut.

Quantity take-off menggunakan metode BIM ini dilakukan pada pekerjaan struktur *Car Berth*. Data – data yang digunakan antara lain gambar RTA *Car Berth* dan volume pekerjaan pada *Car Berth*. Data gambar RTA menjadi referensi untuk memodelkan BIM menggunakan *Autodesk Revit* yang kemudian diekstrak volumenya melalui *CellBIM*. Selain itu dilakukan wawancara terhadap praktisi di perusahaan tersebut terkait kendala dalam melakukan *quantity take-off* menggunakan kedua metode tersebut.

Dari proses tersebut terdapat selisih hasil perhitungan *quantity take-off* antara metode BIM dengan metode konvensional yaitu Pada item *Pier Head, Deck Slab Type D, Pier Head East-end, Deck Slab Type C* dan *Coping Concrete* yang masing – masing sebesar 2,52%, 0,13%, -2,19%, -0,17% dan -2,49%. Kendala pada proses *quantity take-off* menggunakan metode BIM yaitu waktu yang dibutuhkan untuk *modelling* relatif lama karena dibutuhkan ketelitian dan dibutuhkannya *hardware* serta lisensi *software* yang relatif mahal. Jika menggunakan metode konvensional, kendalanya yaitu hasil kalkulasinya tergantung dengan cara perhitungan yang digunakan dan apabila menemui item yang kompleks maka hasilnya kurang maksimal.

Kata Kunci: BIM (*Building Information Modelling*), *Quantity take-off,* Selisih, Kendala.

ABSTRACT

Title: Quantity Take-Off Based on BIM (Building Information Modeling) in Patimban Port Development Project Package 5 to Improve Calculation Accuracy, Name: Iklam Choeru Fadli, NIM: 41118320068, Advisor: Elhazri Hasdian, S.T., M.T., M.M., PMP, 2023.

BIM (Building Information Modeling) is one of the alternative methods for time efficiency and accuracy in calculating the volume of work. By applying BIM for the quantity take-off process in the Patimban Port Development Project Package 5, it is hoped that it can minimize some of these obstacles.

Quantity take-off using the BIM method is applied to the Car Berth structure work. The data used include the RTA Car Berth drawing and the volume of work on the Car Berth. RTA drawing data is a reference for modeling BIM using Autodesk Revit which is then extracted volume through CellBIM. In addition, interviews were conducted with practitioners in the company regarding the obstacles in conducting quantity take-off using the two methods.

From this process, there is a difference in the results of the quantity take-off calculation between the BIM method and the conventional method, namely in the Pier Head, Deck Slab Type D, Pier Head East-end, Deck Slab Type C and Coping Concrete items, which are 2.52%, 0.13%, -2.19%, -0.17% and -2.49% respectively. The obstacles in the quantity take-off process using the BIM method are the time required for modeling is relatively long because of the accuracy required and the need for hardware and software licenses that are relatively expensive. If using conventional methods, the obstacle is that the calculation results depend on the calculation method used and if you encounter complex items, the results are not optimal.

Keywords: BIM (building information modelling); quantity take-off; difference; obstacles