Perancangan Sistem Audit Stablecoin Berbasis Emas dengan Model-Based Systems Engineering = Designing Audit System of Gold-Backed Stablecoin with Model-Based Systems Engineering

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Abstrak

Dalam menghadapi desain sistem yang rumit, Model-Based Systems Engineering (MBSE) direkomendasikan untuk memecahkan tantangan dari pendekatan tradisional Document-Based System Engineering (DBSE). Untuk menerapkan MBSE, diperlukan tiga pilar: bahasa pemodelan, metodologi pemodelan, dan software pemodelan. Makalah ini menyajikan Sistem Audit berbasis MBSE untuk desain Stablecoin berbasis emas yaitu proyek SCA-01. Melalui tahapan analisis kebutuhan, analisis fungsional, dan sintesis desain, desain dan pemodelan diselesaikan dengan menerapkan SysML pada arsitektur perusahaan di bawah metode Harmony-SE yang disesuaikan. Contoh proyek SCA-01 juga disediakan, beserta hasil simulasi yang dihasilkan oleh implementasinya. Terakhir, MBSE disesuaikan dengan sistem yang kompleks, alat pemodelan dan metodologi yang tepat harus dipilih untuk mengimplementasikan MBSE, dan diyakini bahwa MBSE dapat meningkatkan manajemen dan komunikasi secara efisien, sesuai dengan praktik desain MBSE yang dinyatakan dalam karya ini.

.....In the face of complicated system design, Model-Based Systems Engineering (MBSE) is recommended to solve the challenges of traditional Document-Based System Engineering (DBSE). To apply MBSE, three pillars are required: modeling language, methodology, and modeling tools. This paper presents an MBSE-based Audit System for Gold-backed Stablecoin conceptual design, namely the G-01 SCA project. Through the stages of requirements analysis, functional analysis, and design synthesis, the design and modeling are finished using the Capella Application under the supervision of the customized Harmony-SE methodology. An instance of the G-01 SCA changing parameter scenario generated during its implementation is also provided. Finally, MBSE is fitted to complex systems, and appropriate modeling tools and methodology should be selected for implementing MBSE. It is believed that MBSE can increase management and communication efficiency, according to the MBSE design practice stated in this work and by the result of an evaluation survey conducted for the internal team of the G-01 SCA project.