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Knowledge management for space activities in the digital era (2)

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BLOCKCHAIN BASED ARCHITECTURE FOR KNOWLEDGE MANAGEMENT IN THE SPACE INDUSTRY

Abstract

Development and adoption of Knowledge management Process within the space industry is gaining pace, as it embodiments the intellectual capital of an organization. The factor that defines the implementation of knowledge management within the industry is the financial value of the intellectual capital. Understanding the importance of Knowledge management, few space agencies has already implemented specific tools to address the knowledge base that can be shared, accessed and used to increase the efficiency inside the organization. Some issues pertaining with the knowledge management are the stakeholder's adoption of sharing and re-using the knowledge within the process, individual retirements, new stakeholders deployment into the programs without its substantial knowledge, loss of knowledge when the stakeholder moves or deployed into other programs. This paper outlines those issues pertaining with the knowledge management using Blockchain based architecture. European Space Agency has found out that, their staffs are more keen about the searching capability , usability, accessibility and sharing in the knowledge management tool that they have implemented. To monitor the knowledge base transparently, to determine the ownership of the intellectual assets, relationships of the knowledge, to network the stakeholders across the organisation securely, to increase the efficiency of the company's performance, to safeguard the knowledge, to utilise and enhance the data acquired, the knowledge management tool has to be incorporated with the blockchain based architecture. This Proposed blockchain based architecture will organise the stakeholders across the organisation in a distributed manner or the stakeholders participating in the program in a decentralised manner. This will create the transparency within the program or the organisation. The architecture will allow the users to access, update, monitor and share the knowledge securely by leaving a cryptographic hash functions in the network. This blockchain based architecture can also be defined with the risk management measures taking into account, as well as the project management. Blockchain applications on concurrent engineering will help the industry to monitor the knowledge base efficiently. Even though , this paper address the knowledge management issues with the application of blockchain, it also tries to address the risk management.