MÉMOIRE

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Thème

MISE EN ŒUVRE D'UN PORTAIL DE RESSOURCES SÉMANTIQUES POUR L'INDUSTRIE ET RÉALISATION D'UN SYSTÈME DE RECOMMANDATIONS

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ABSTRACT

Since its first appearance The Web has gone through a lot of improvements, many versions were studied and developed in such a way to add something new and relevant to the previous versions. The 3rd version of the Web, was known as semantic Web, which introduced the concept of having linked data, unlike the previous versions that were document linked, the need of a new way to represent data that was only machine readable, and not understandable was raised by Web services, the way of representing, saving, treating and exchanging data wasn't helpful at all in terms of the Interoperability between many different agents, thus for this web version has changed the way that was software operating, it made the interoperability more possible with the introduction of Ontology, but still not enough to reach such a great level knowing that the same Ontology can be created and developed so many times because of the lack of the possible ways to make it visible, in this thesis we will introduce our way of managing Ontologies, starting from sharing them in an online accessible repository, and making that possible for the field of industry, this online repository or portal will be named IndustryPortal.

After the deployment and the publishing of the IndustryPortal, a new challenge comes into the sight which is evaluating the level of FAIRness of an ontology that will be introduced in the upcoming chapters, and based on many researches we will adopt the MOD metadata model that we will describe in details later on, this model will

be put into the test on our IndustryPortal ontologies by developing and deploying a fairness assessment module called O'FAIRe.

With the multiplication of a large number of the ontologies and the limited way of browsing them by users (manually), not to forget the necessity of making systems interoperable by exposing and suggesting already developed ontologies that could interest the user, the portal has a feature called Recommender, and this briefly is a terminology search mechanism. We will propose a Recommendation system based on machine learning techniques, using the MOD metadata and the user log.

Key words: Web, Semantic Web, IndustryPortal, FAIRness, Ontology, interoperability, recommendation system, industry.