

Smart Combination of Legal Rules and Geo-Information to Support Spatial Development Projects

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SUMMARY

In 2021 a new environmental planning law, the ‘Omgevingswet’, is planned to go in effect in The Netherlands. This is a major legal operation which replaces many existing laws. A new smart solution - the ‘Digitaal Stelsel Omgevingswet (DSO)’ - is set up to support citizens, companies and government. Rijkswaterstaat is one of the development partners. DSO combines legal rules, business rules and geometry in a system of software components and services. These concepts are used to provide end users – citizens and companies – answers to the question if they need permission from the government for their activities with impact on the environment (like building, demolishing, draining waste water). DSO also supports the application for a permit, based on the relevant business rules for the specific planned activity on a specific location.

Innovative in the solution is the concept that local government not only need to set up land use regulations in legal documents, but they are also responsible to set up business rules based on these regulations. Business rules are based on a new decision management standard based on the Decision Model and Notation (DMN) standard. The business rules are used by the system’s rule engine to provide end users a decision. Legal rules and business rules can share concepts like activities and geometry. When executing the business rules, the geometry information object attached to the legal rules can automatically be used to provide the end user in the DSO portal a decision based on the legal requirements at a particular location.

DSO will need facts to come to a decision. To ask questions and gather answers the system needs input (facts): location with the intended activities defined by the Omgevingswet. The location can either be an address, a point on a map or even a polygon. Some facts are only known by the end user and they will be collected through questions smartly generated by DSO. Some facts can be deduced because the facts are already known from one of the registers of the government. Facts,

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which are dependent on a location as indicated in law, can also automatically be deduced. For example, if a legal rule states that it is prohibited to cut down a tree in a nature reserve, then this fact can automatically be used by the business rule based on this legal rule. A challenge to this system is when the location polygon of the development site only touches a part of the legal location. Then further business rules are used to be able to come to a correct decision. This will be done in interaction with the end user.

DSO will enable citizens and companies to plan their development activities and guide them through the permit application process with minimum effort, using automated decision making combining both legal rules and geo-information.

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