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**A GIS-based public GMO location register adaptable to the requirements of the
EU Member States**

Anja Vaasen

Department Genetic Engineering
Federal Office of Consumer Protection and Food Safety (BVL)
anja.vaasen@bvl.bund.de

Jana Storch

Department Genetic Engineering
Federal Office of Consumer Protection and Food Safety (BVL)
jana.storch@bvl.bund.de

Kai Uwe Priesnitz

Department Genetic Engineering
Federal Office of Consumer Protection and Food Safety (BVL)
kai.priesnitz@bvl.bund.de

Achim Gathmann

Department Genetic Engineering
Federal Office of Consumer Protection and Food Safety (BVL)
achim.gathmann@bvl.bund.de

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Abstract:

The Directive 2001/18/EC regulates the deliberate release of genetically modified organisms (GMOs) into the environment. According to Article 31 (3) of this Directive EU Member States shall establish location registers recording the locations of GMOs grown for monitoring purposes and information of the public. As a partner within the EU-project PRICE, the German Federal Office of Consumer Protection and Food Safety developed a GIS-based location register (GLOREG) for GMOs, adaptable to the different requirements of the EU member states. Using a questionnaire the BVL asked the Competent Authorities of EU and non-EU countries in Europe for (i) detailed background information of their current location registers and (ii) their expectations on the functionality of location registers. This information should put us in the position to develop a location register, which is adaptable to the demands of EU-Member States (MS). Most MS already implemented the Directive into national law, even if they do not perform any deliberate release or cultivation of GMOs in their country. The Competent Authorities distinguish between deliberate release (mostly 'experiments') and cultivation of GMOs within their national regulations and notification rules. National regulations also vary regarding the organization of cadastral data in the agrarian landscape. GLOREG considers these differences with modular structure, which can be maintained, expanded or modified in its existing functionality according to the different demands. The modules are designed for language, customizable data, geo data, service purpose, authorization purposes, and farmer verification. We used open source software systems, libraries or frameworks for all components of the application. It provides an interface to its data via web service and can be installed on established operating systems. The user interface of GLOREG is web based and can be adapted to the corporate identity of the appropriate agency or organization. Four different clients with different access rights interacting with the user interface were defined exemplarily. For protection against unauthorized access these different clients got different certificates. A web feature service of GLOREG provides an INSPIRE conform access to the spatial information to cover the requirements of Directive 2007/2/EC (INSPIRE).

Keywords: GMO location register, GIS, INSPIRE**JEL codes: Q, R**