



Harmoni-CA

A geo-information tool for implementation of the Water Framework Directive

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Abstract

Background

INTWIS a state-of-the-art information system that is used by a large number of waterboards in The Netherlands and two regional offices of the ministry (rijkswaterstaat). It provides the watermanagers with a database for the storage of the information, and the tools to analyse and present the data in this database. Intwis has a modular architecture and is developed on ESRI ArcGIS 9 and Oracle.

Problem

By the implementation of the Water Framework Directive (WFD), there will be some changes necessary around the computer system INTWIS. The current INTWIS application is not fully equipped to produce the reports that are requested by the WFD. As a result INTWIS programme cannot fully support the water managers in the production of the maps and reports. The Water Boards therefore request improvement of the programme in order to be able to meet the demands that are defined by the Directive.

Current changes that are being implemented in INTWIS are: definition of waterbodies in the database and reporting facilities.

The big challenge for the waterboards however, still lies ahead of us. They will have to provide the reports concerning the actual quality of the water. But more important: they will have to be able to assess the effects of the proposed measures on the waterquality. If the waterboards fail to make this assessment it will not be able to define if the minimum quality will be reached. This brings about a huge risk of being fined, if indeed the standards are not met.

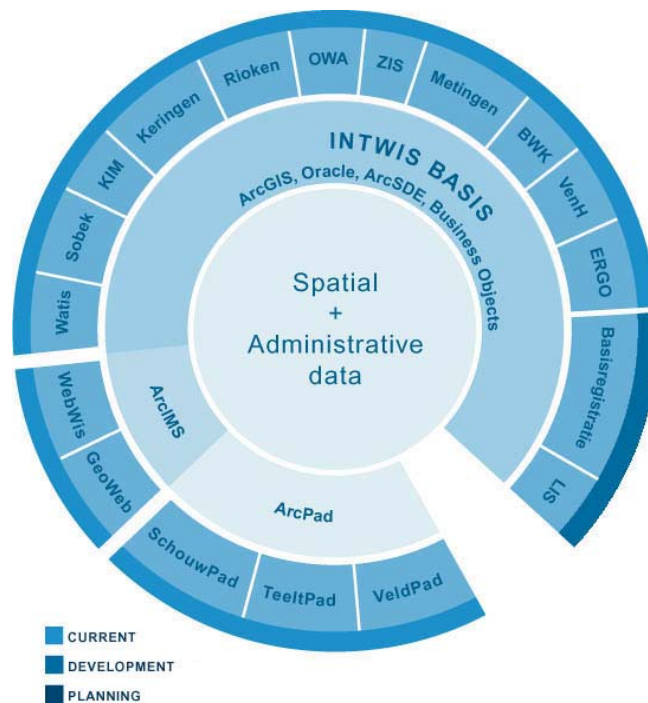


Figure 1 Modules INTWIS

Research program

In July 2005 Marco Wagemakers, studying at the Wageningen University and Research Centre the Netherlands, has started a one year research program. In this period he will analyse the deficiencies within INTWIS in view of the WFD and will propose enhancements to this information system. It will conclude with the construction of a prototype within the INTWIS program. The total research consists of the following phases:

Four phases

The research program has four phases.

1. Water Framework Directive

As first the WFD is evaluated. The aim is eventually to obtain the report objective within the WFD. This report method must be well examined. In step one all requirements must come clearly forward.

2. INTWIS

As second step the current INTWIS application gets all attention. The current architecture of the application will be examined. The current functionality is examined. Gaps between the current application and the desired application will be identified.

3. Inspire

The Infrastructure for spatial information in Europe comes up to discussion. Study to the architecture is done which is described within INSPIRE. This step also has been based entirely on existing literature and other available material, for this reason this part is literature research.

4. New tools

In the field of GIS a lot of new tools come on the market very fast. ESRI, but also other companies, develop new products. Also Open Source variances come up very fast. The existing and new products force to a study into the new tools. These can be used to complete the INTWIS application. Thus in the future these can satisfy to the directives that are put by the WFD.

Results

The result of this research gives directions for the development a tool to support the WFD implementation process within the INTWIS environment. The prototype phase, in which the results of this research will be transformed to usable information systems, will finish around April 2006.