

## **VECMAP, A ONE-STOP-SHOP TO VECTOR MAPPING**

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Diseases carried by vectors such as mosquitoes or ticks are an increasing public health concern worldwide, yet often relatively little is known about their spatial distribution. Without a clear understanding of where the diseases or vectors are already present or which areas are vulnerable to spread, effective strategic planning for control in the event of an outbreak is impossible. VECMAP addresses this problem head on by providing a seamless system that integrates the entire process of producing risk maps into a single package that can be used by a wide range of practitioners, either on their own or supported by a consortium of acknowledged experts. The VECMAP system includes software and supporting services and has three main integrated software components. The first provides the means to design and execute field sampling campaigns using smartphone and GPS technology linked to a centralised databases for archiving and storage. The second is an area-wide distribution modelling software package, fed by the VECMAP field samples and Earth Observation processed data. The third is the Information System which is the glue that integrates the other components and provides access to all the required supporting data as well as the means to display and analyse final mapped products in a Geographical Information System (GIS) environment. VECMAP also offers the following services: Training; On-line help; Timely VECMAP upgrades; Annual Earth Observation product packages; Secured external data management platform; and VECMAP network membership. In addition vector habitat modelling at the landscape scale is also offered as a service. The European Space Agency (ESA, IAP Program, Noordwijk, Netherlands) has enabled three companies to join forces in developing VECMAP and subjecting it to an extensive and wide ranging feasibility assessment. The consortium led by Avia-GIS (Zoersel, Belgium) and including ERGO (Oxford, United Kingdom) and MEDES (Toulouse, France), combines their expertise in spatial modelling, the development of spatial information systems and smart-web tools, and of Earth Observation time-series production chains. Particular assistance was also provided by RIVM (Bilthoven, Netherlands) to coordinate user test activities. The prototype VECMAP is now functional, and focuses on mosquito vectors. The System is currently in a demonstration phase, also supported by ESA, during which the System is being refined and further field tested by twelve collaborating Institutions in Europe.

**Key Words** Vector distribution, sampling strategy, spatial modelling, earth observation, smartphone, integrated system