

# Pesticide Application Manager (PAM) - Decision Support in Crop Protection based on Terrain, Machine, Business and Public Data

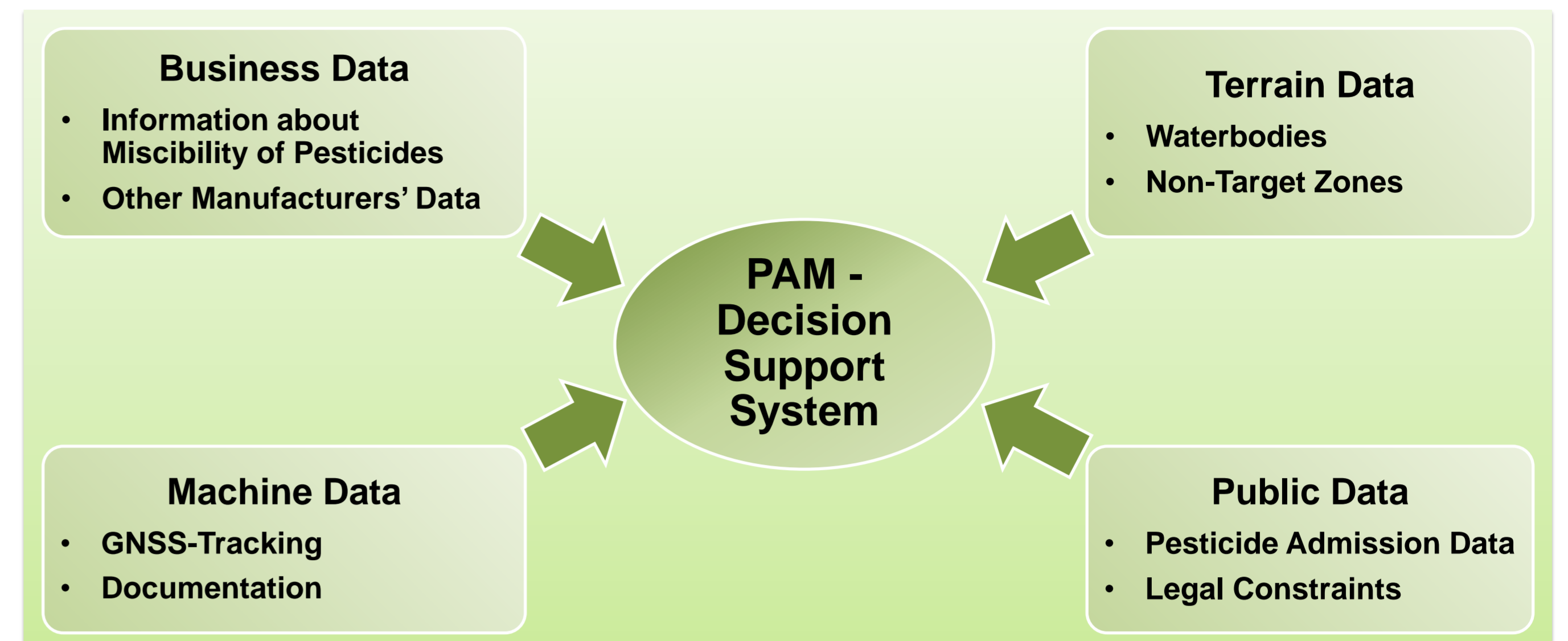
Entscheidungsunterstützung im Pflanzenschutz auf Basis von Gelände-, Maschinen-, Hersteller- und Behörden Daten

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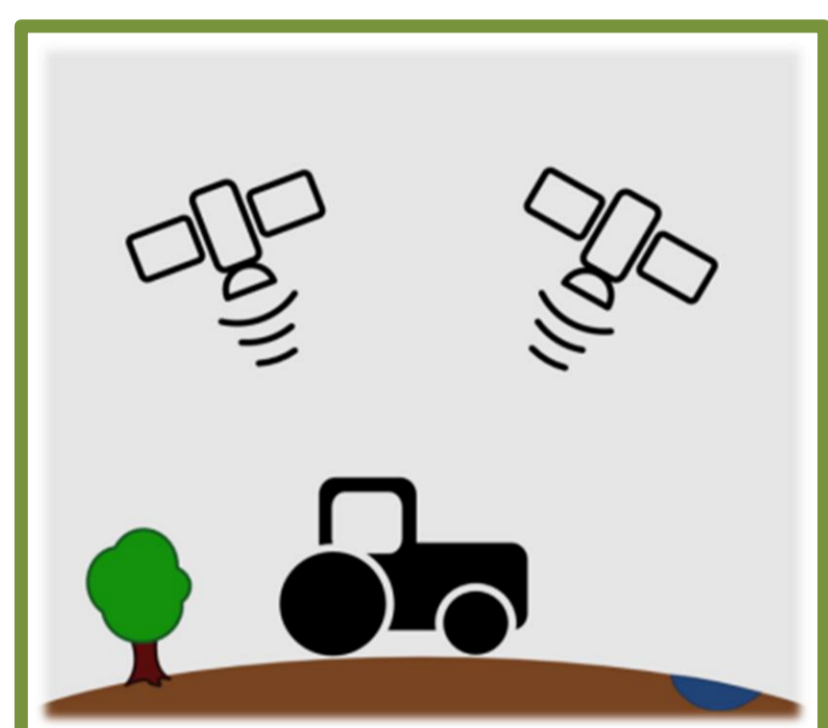
## Introduction

Pesticide Application Manager (PAM) is a project co-funded by the German Federal Ministry of Food and Agriculture (BMEL) that aims to develop solutions for automating important processes in crop protection by using ICT. One of the focal points of the project is the development of a Decision Support System (DSS) that automates pesticide application and the protection of adjacent natural and aquatic ecosystems. This will be implemented by using GIS-created, machine readable application maps including legal buffer zones where spraying is prohibited. Therefore crop protection measures will be less error-prone and easier documentable. Additionally a reduction of pesticides is facilitated. The result is less costs for farmers as well as an improved pollution control.



## PAM Decision Support System

### GNSS – Survey



Recording of non-target zones (e.g. rivers, hedges) as well as field geometries using high-precision GNSS on farm machines. This process can be included in routine work processes, e.g. seeding.

### Data Input



Information about cultivated crop, spray nozzle and geographic coordinates are necessary for the DSS. This data can be provided directly from a Farm Management Information System (FMIS) or via web interface.

### Calculation of Legal Buffer Zones



Web service using the data input and different databases for automatically generating legal buffer zones. For example:

- Database of authorised plant protection products in Germany
- Water laws of German states

This ensures that legal regulations will be observed.

### Application and Documentation



Automated application with GNSS supported farm machinery and pesticide sprayer with section control. Documentation can be used for consecutive treatments and to prove the compliance with legal buffer zones.

### Verification



Mobile application on smartphones to read bar code labels of crop protection product containers to verify the ISO-XML task and to provide additional manufacturers' information.

### Creation of Application Map

Provision of application map in non-proprietary ISO-XML format (ISO 11783-10). After confirmation by the farmer the map can be used on terminals of different manufacturers.



## Project Partners

PAM is implemented by a consortium of public and private organizations under lead of the German Central Institute for Decision Support Systems in Crop Protection (ZEPP). The duration of the project is from 2013 to 2016.



www.zepp.info/projekte

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Central Institute for  
Decision Support Systems  
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