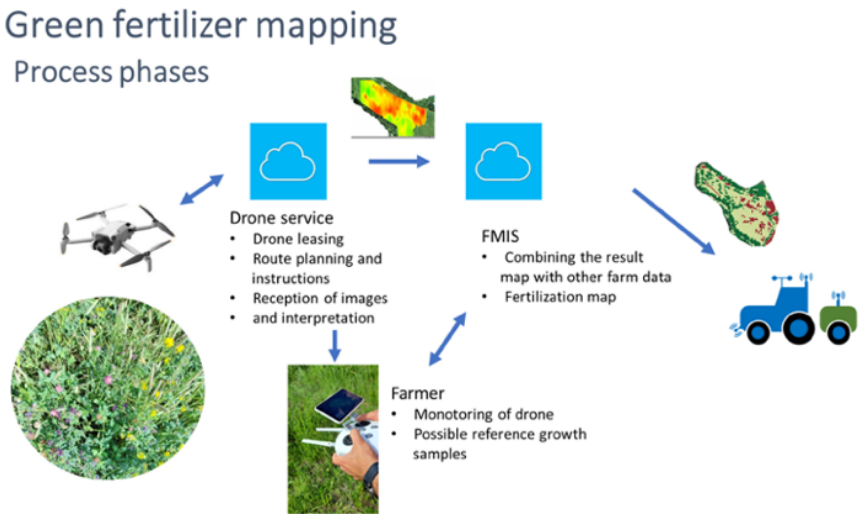
Unmanned-Aerial-Vehicle-based Green Fertiliser Mapping

Green fertilizer mapping (GFM) aims at defining the amount of nitrogen fixation by legume plants in in-field scale. The technology is based on the automation-assisted drone imaging (RGB) from low altitude (5 m) covering the whole field, as well as on an image of the entire field from higher altitude. The image of entire field was used for biomass estimation and the low-altitude images to define the growing density of legume plants. The growing density of legume plants is determined utilizing AI assisted recognition of the number of flowers per drone image. The amount of fixed nitrogen in a growing site is based on mathematical models per legume plant type. The model parameters include the amount of yield and its legume plant fractions. To validate the biomass estimation some growth samples are measured as ground reference.

The technology is provided as a service for farmers, where the role of a farmer is to take a leased drone to the target field and to monitor the safety during the mission. Everything else in the service takes place automatically. The service concept was put together in response to a need that has arisen for the application of green fertilizing in precision farming. The service combines several well-known technologies in a new way for the described application. The service is not available in the market yet.



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