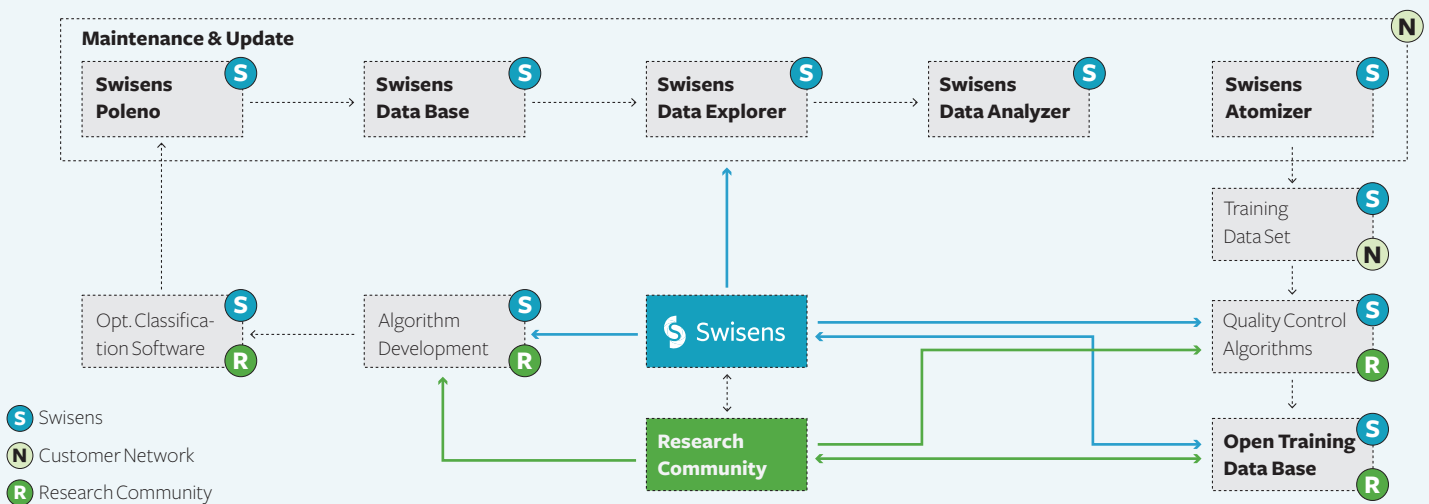


**Swisens Ecosystem** enables you to enter a new era of particle measurement and identification with new perspectives in application. Our customized turnkey solutions create new dimensions in real-time aerosol particle classification.



### Flexible And Optimized Particle Identification

By purchasing one of our solutions for particle measurement, you can participate in the Swisens Ecosystem and benefit from continuous enhancements in classification and from the extension to new particle classes. The built-in flexibility enables customized particle measurement networks to suit individual needs. Swisens Ecosystem provides open access to the Open Training Data Base and allows customers and researchers to contribute to the development of optimized and extended classification software.

### Swisens Ecosystem Services:

- Device maintenance incl. classification software updates
- Training Data Set (TDS) generation
- Development of classification SW for new particles
- Device maintenance and operational training
- Instruction on TDS generation
- Installation and setup of network configuration
- Operation of Swisens Data Base
- Swisens Poleno upgrade
- Support and trouble shooting
- Customer specific adaption on request.

### Open Training Data Base

The Open Training Data Base is hosted by Swisens and provides open access to the Training Data Sets produced by the customer network or Swisens. Customers can restrict access to their own data if desired. From this data collection, new and optimized classification software can be developed by Swisens or the research community.

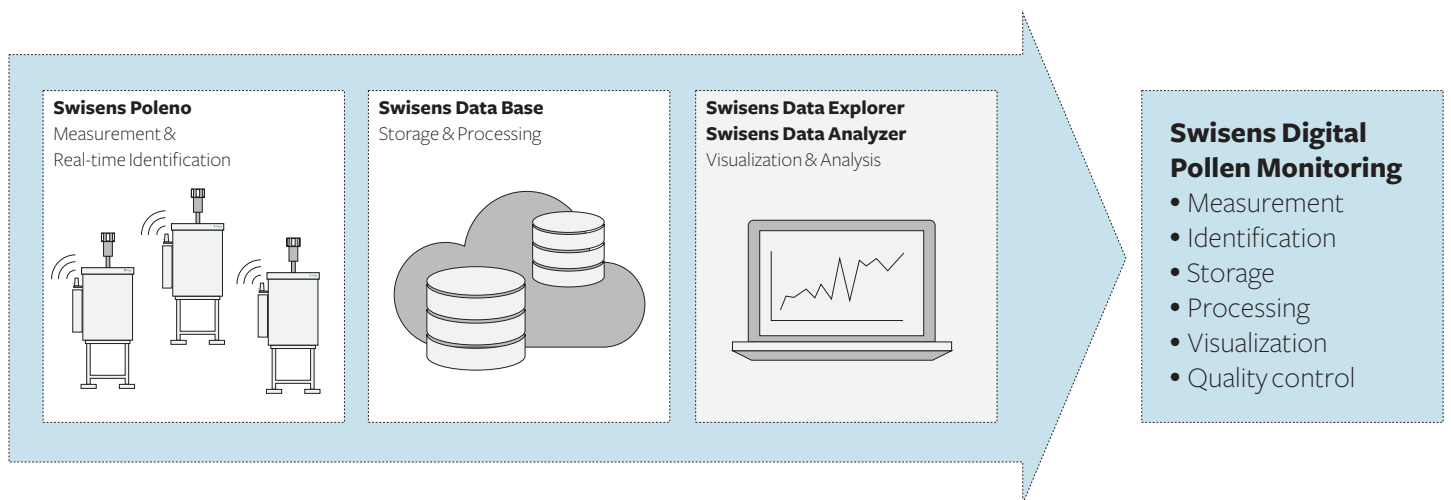
### Customer Training Data Set

To extend the classification software, additional Training Data Sets are required. The calibration data is used to train the artificial neuronal network. To extend the classification software to include local species of pollen for example, Training Data Sets can be produced on site by every Swisens Poleno with the additional Swisens Atomizer accessory.

### Quality Control

The quality control algorithms are maintained by Swisens and the research community. Swisens Data Explorer and Data Analyzer are useful tools for the visualization and the analysis of the raw measurement data and the results of the identification software.

**Swisens Digital Pollen Monitoring** identifies particles within seconds and allows for the calculation of the actual local pollen-taxa concentration with a time resolution in the range of minutes. This data can be used as input for pollen forecasts and numerical models.



### Swisens Digital Pollen Monitoring

- Better and reliable quality of pollen-taxa data
- Real-time data of local pollen concentration
- High time resolution of local pollen-taxa concentration
- Instant verification of classification results
- Optimized classification SW by Swisens Ecosystem
- Full data service solution for real-time pollen taxa-data

With Swisens Digital Pollen Monitoring, pollen measurement networks can be managed centrally. Every Swisens Poleno features customizable data management by the Swisens Data Base. Swisens Data Explorer and Swisens Data Analyzer visualize and analyze the raw measurement data and illustrate the results delivered by the identification software.

### Current Manual Pollen Identification

The pollen forecast today is incredibly inaccurate due to the lack of appropriate means for real-time pollen measurement. The method of measurement presently in use relies on the counting and identification of pollen by trained specialists using a microscope. It is mostly done as manual labor and follows a time-consuming sequence of tasks as shown in figure 1. This is expensive and it requires several days before the measurement results are available. Furthermore, in practice the accuracy is limited due to the small analyzed area.

### Advantages Of Swisens Digital Pollen Monitoring

- Maintenance friendly
- No consumables for operation
- Remote access and control
- Intelligent device status monitoring and notification
- Full solid state electronics and optics

The design with full solid-state electronics and optics allows for an operation time of at least 10 years with a maintenance interval of 9-12 months.

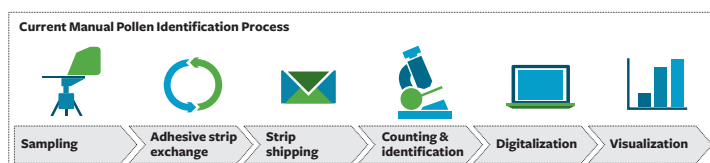


Figure 1: Traditional method for pollen measurement by Hirst pollen traps