

# SILVISMART

*Silvismart digitalizes the dataflow from forest operations and transforms machine-captured data into business intelligence and decision support. It:*

1. Receives and securely stores data from forest machines, or other electronic submission procedures.
2. Gives the operations contractor, machine owner, and/or machine operator direct access to their own data, and allows them to share it with others (e.g. forest owner).
3. Prepares the data for analysis.
4. Provides interactive analysis and visualization tools for the collected data.

Gives the possibility of transferring data and information to the forest owner / forest manager / appointed 3<sup>rd</sup> party without disclosing personal information and performance data.

## What is Silvismart?

Silvismart is the operational name for the Efficiency Portal, an important output of the BBI-JU/H2020 project TECH4EFFECT. So, what does Silvismart do?

The main motivation behind the Silvismart system is to make the management of daily operations more efficient by facilitating an automatic digital data transfer from forest machines to a central database, and transform the collected data into useful information for machine operators, machines owners and forest owners and managers.

Silvismart ensures that your data is securely stored and that any personal data, production data, and information on the forest itself are kept separate, and are only accessible to appointed target groups.

Silvismart is your virtual point of entry to productivity figures and information and advice on how you can continually improve the efficiency of your operations. Data collected from modern forest machines can be used in generating a wealth of information, and Silvismart gives you the tools to analyse and understand your data.

In Silvismart, data is sorted into groupings before being made available to a user: i) performance data (e.g. m<sup>3</sup>/hr, m<sup>3</sup>/l diesel); ii) forest data (e.g. the size and distribution of trees, species and assortments across the site); iii) personnel data (e.g. the operators' personal data, shift length); and iv) environmental data.

## Silvismart has four different interfaces designed for contractors, machine operators and forest owners/managers

The interfaces provide targeted information to the various participants in the initial wood supply chain, and maintain control over who has access to which data elements. What data you have access to depends on your user type: contractor, machine operator or forest owner/manager, which is linked to your e-mail address used for log-in. The contractor, who is the primary provider of data, controls which data will be exchanged and with whom:

When a contractor starts using Silvismart, each machine id is linked to his/her email account. The contractor will have access to all data types through the *My Fleet* and *My Operation* interfaces. Through the *My Files & Access* interface the contractor can give access to a forest owner or forest manager (also identified via their email account) to a given stand. Once a forest owner/ manager has been granted access they can view, analyse and download the forest information through the *My Stand* interface.



**My Fleet:** Information for the contractor in a standardised form, irrespective of the make and model of machine. My Fleet offers an overview of the production of registered machines, and data visualization and analysis are focused on the machines. My Fleet offers insights into how your machines are performing relative to each other, how well your machines are suited to the tasks they work on, and how well your machine fleet performs in comparison with similar fleets in your sector (machine type, age, forest types).



**My Operations:** Information for the contractor on a single operation (stand) in a standardised form, including an overview of the production over all the machines that have worked there. My Operation offers insights into the performance and status of an individual object relative to other objects the contractor has worked on.



**My Stand:** Forest information for the forest owner / manager on a single stand in a standardised form, irrespective of which contractor carried out the operations. This includes species, volumes, assortments and maps of the stand and trees.



**My Files & Access:** Overview of the files submitted to the system and access rights. Here contractors can give access to forest owners/ managers to the forest information of a given stand for their My Stand and My Forest interfaces.

## What is the global Silvismart system?

Machine data are generally collected using a global standard (Standard for Forest Data - StanForD). Silvismart collects StanForD files and is designed around one universal system that maintains and updates the actual database that stores the data, reads the data from the incoming files, and updates and develops the actual analysis and reporting tools available in the system. Having one universal system makes the actual development and maintenance cost very low for the individual countries and organizations that use the system. Work is also ongoing in making Silvismart accessible to other data formats such as data captured from cable yarders.

## What are the national Silvismart portals?

The national Silvismart portals serve as access points to the global Silvismart system. The host of the national portal is responsible for user support, making the system and tools available in the national language, and provides the website that links to the Silvismart system. Further, the national host adapts contracts on confidentiality and other restrictions to data use, essential in ensuring the longer-term sustainability of the Silvismart system, also in terms of generating revenue for covering the costs of maintaining the system.

## What is the connection between the national portals and global Silvismart?

The national portals and the global Silvismart system are mutually dependent. The global system maintains the database, algorithms, code and analytical tools. The national portals ensure that the system is properly adapted to local interest and conditions and that it is actively used. During the lifetime of the TECH4EFFECT project (until October 2020), all costs associated with development of the global system, as well as those incurred in establishing the national portals, are covered through the BBI-JU funding received for the TECH4EFFECT project.

## What happens to Silvismart when the TECH4EFFECT project finishes?

To keep Silvismart operational after TECH4EFFECT, the global system will be owned by an international association (the statutes are currently being set up). Hosts of the national portal will be members, as well as the TECH4EFFECT partners that have made substantial contributions to the development of Silvismart. However, the association would also be open for additional members to join. This ownership form would require an annual subscription fee from the members to cover the costs of maintaining and continually improving the system and will have appropriate decision-making structures and procedures to take all necessary steps.

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