

November 2017

Principles relating to the ownership, use and processing of forest machine data – a recommendation

1. Background and purpose

The more efficient utilisation of forest information makes it possible to improve the productivity and cost-effectiveness of the wood supply and to increase the wood's value added. Information on the tree stand and on terrain and road network conditions is available from numerous public and private information sources. One central future information source will be information gathered in connection with mechanical forest work, known as forest machine information.

Forest machine information refers to information sent to a machine's information system for the purpose of implementing the work, and to new information generated in the system during the work. Forest machine information is used nowadays, inter alia, in the planning and control of timber harvesting and forest management jobs, as a basis for wood sale and contracting payments and for service invoicing, in the performance and quality reporting of jobs, in prediction, remote guidance and control of the servicing of machines, and in the monitoring of work productivity, energy efficiency and viability. Future opportunities for use can be seen, for example, in the predicting of the load-bearing capacity of terrain, updating of forest resource information, in the gathering of tree stand and soil data as reference information for remote mapping and in predicting the quality of timber. Utilisation of forest machine information in different information systems and applications is seen thereby as having a significant effect of increasing the efficiency of the forest economy and wood procurement and as offering an opportunity for producing value added.

This joint recommendation of forest companies, forestry contractors and machine manufacturers describes the general principles of ownership and use of forest machine information for the purposes of forest economy jobs. The purpose of the Recommendation is to clarify the rules of ownership and use of information and to promote the construction of applications and services based on forest machine information for the purposes of sector operators. Use of forest machine information most often calls for agreements between the owner and the user of the information, agreeing in detail on the production and use of data. The Recommendation has been drawn up taking into account the requirements of competition legislation, and the purpose is not to harmonise agreement practices. The Recommendation has taken into account the requirements of the EU Data Protection Regulation (2016/679) entering into force on 25th May 2018. The compiling of the Recommendation was launched as part of the "Implementation information as part of forest resource information" recommendation drawn up under the leadership of the Ministry of Agriculture and Forestry, the purpose of which is to promote utilisation of information produced in connection with forest jobs in the updating of forest resource information.

This recommendation supersedes the earlier "Principles relating to the rights of surrender and use of timber harvesting control and production data" recommendation drawn up in 2013, signed by Finnish Forest Industries, Koneyrittäjien liitto ry, John Deere Forestry Oy, Komatsu Forest Oy and Ponsse Oyj.

This recommendation has been co-ordinated by Metsäteho Oy, with Metsäliitto Osuuskunta, Stora Enso Oyj, UPM-Kymmene Oyj, Metsähallitus, Metsätalous Oy, Finnish Forest Industries, Koneyrittäjien liitto ry, John Deere Forestry Oy, Komatsu Forest Oy and Ponsse Oyj represented on the working group that prepared the Recommendation.

The working group that prepared it assessed the content of this Recommendation annually or as new types of information or methods of producing information are introduced generally.

2. Rights of surrender and use of data

General

The aim of the recommendation is to describe the parties' rights relating to data used in forest machines and produced by them. The Recommendation defines joint rules relating to ownership of data, [their] use and surrender of rights of use to make the parties aware of their rights and obligations and that there exist joint operating models and principles for the management and use of data. The Recommendation has been seen to be necessary when data are passed between the contracting parties of timber harvesting or forest management jobs or when these are surrendered to outside operators or when information is processed, further-processed or it is combined with other information materials, and new information products are formed for use in applications and service other than in their original purpose.

Data produced by forest machines and their devices and the data formed from them are usually part of the timber harvesting and forest management jobs service, on which the contracting parties agree between themselves. Some of the information produced in connection with the service is sensitive information relating to the customer's or forestry contractor's business activity, which is per se only available to the party itself, but to which another party can nevertheless have a limited right of access as agreed separately. Information of this kind includes the forest company's values and settings guiding the cross-cutting of wood products and the forestry contractor's time data describing the productivity of the work. When applying a limited right of access to information, it is good to agree on the content, use [and] period of use of the data and on the possible surrender of the information to operators outside the contracting parties.

As regards rights of ownership and access, the Recommendation does not define in detail what end-uses each piece of information is used for or in which information systems the data are processed or stored. The basic principle is that the holder of the right of ownership to the information has an unlimited right of access and release, and that the user of the information has rights according to the agreed terms. The customer and forestry contractor can also agree on broader use of data for developing the operation.

Concepts

Right of ownership

The right to use information and to determine use of information in all respects. With regard to some information groups, right of ownership is enjoyed by both contracting parties of timber harvesting and forest management jobs. The right is due to both contracting parties independently separately, unless agreed otherwise.

Right of access

The right to use information for the purpose and to the extent required by the assignment and in developing one's own business activity, but not to grant access rights, or to transfer or release data to other operators.

Limited right of access

The right to use information for a limited use on the basis of an agreement concluded with the owner of the information. No right to grant access rights or to transfer or release data to other operators. Examples of limited right of access are the utilisation of forest machine data in machine manufacturers' product and service development, in system suppliers' application development, research and development work and in teaching.

Groupings of data and operators

Rights of ownership and access relating to forest machine data are defined in this recommendation by information group, file type and operator group. The use, producer or place of formation of the information, the inclusion of the data within the scope of standardisation (StanForD standard) and potential new information materials have been taken into account in the information grouping. In the specification, the different machine types (felling machines, forwarders and forest management machines) are kept separate because files of the StanForD standard are different in them. The uses and methods of formation of the data are nevertheless, as far as grouping is concerned, identical even with different machine types. The data have been grouped as follows:

1. *The data required in the implementation of work that are sent to the forest machine*
 - work site and harvesting guidelines including map and location data
 - timber product and wood product guidelines
 - harvesting guidelines and quality requirements
2. *Data of the StanForD standard produced by the forest machine's information system or data formed in customer's application*
 - production data
 - working hours and productivity data
 - inspection and calibration data of measuring device and loader weighing machine
 - follow-up report on measurement precision
 - location data formed by machine in connection with work
 - self-supervision data and reports on harvesting quality
 - criteria for invoicing of harvesting
3. *Machine make-specific and non-standardised data produced by forest machine*
 - fuel consumption and emission data
 - other data
 - machine's location and status data
 - data relating to machine' technical operation, fault diagnostics and servicing
4. *Potential new data to be produced with forest machines*
 - situation data (produced by machine's information system or additional device)
 - wood map data (location and property data on trees felled or left standing, produced by local mapping with methods based on image interpretation)
 - data describing wood quality
 - other possible information materials.

Potential future fields of application of forest machine information are described in Annex 3.

In the operator grouping, users of data are divided into three main groups:

1. Contracting parties
 - customers
 - harvesting and forest management service undertakings
2. Machine and measuring device manufacturers
3. Other service providers and information users
 - operators supplying harvesting information services to the contracting parties (system suppliers etc.)
 - further processors of forest machine information and data warehouse administrators
 - other end-users of forest machine information (e.g., Finnish Forest Centre)
 - research and development organisations
 - educational establishments
 - forest owners.

Data group-specific rights of ownership and use are shown in Annex 1.

Data to be regarded as personal data can be contained according to the present assessment in the files of information groups marked with a cross in the table below. It shall nevertheless be taken into account that data containing personal data can be in StanForD 2010 files either obligatory or optional. In many files, harvesting object data containing forest owner data are optional.

Data group	Forest owner	Forestry contractor ¹⁾	Driver	Clerical employee ³⁾
Work site and harvesting guidelines	X			X
Timber product and wood product guidelines				X
Production data	X	X	X	X
Working hours and productivity data	X ²⁾	X	X	X
Calibration and control measurement data of measurement device and loader weighing machine	X ²⁾	X	X	
Follow-up report on measurement precision		X		
Location data formed by the machine in connection with work		X	X	
Self-supervision data and reports on harvesting quality	X	X	X	
Data on criteria for invoicing of harvesting		X	X	
Fuel consumption data and emission data		X	X	
Other channel data		X	X	
Machine's location and status data		X	X	
Data relating to machines' technical operation, fault diagnostics and service		X	X	
New information materials		X		

Table 1. Occurrence of personal data on the forest owner, forestry contractor and forest machine driver in present forest machine data.

¹⁾ Identification of contractor with the aid of the machine's identifying data.

²⁾ The file structure renders possible information on the forest owner but is not obligatory information.

³⁾ Expert on timber harvesting or forest management jobs in the service of customer or undertaking producing the service.

3. Personal data and data protection

Taking the EU Data Protection Regulation into account in the management of forest machine data

Data processed by forest machines and produced by machines or equipment can include information counted as personal data, owing to which the obligations originating in legislation regarding the processing of personal data shall be taken into account in all information management. The EU general Data Protection Regulation entered into force in May 2016. It will be applied starting from 25th May 2018, when processing of personal data shall be according to the Data Protection Regulation. The central principles and obligations of the Regulation are described in Annex 2.

The legal basis required for the processing of personal data and for keeping a personal register exists, inter alia, when there is a relevant and appropriate relationship between the data subject and the controller—the data subject is, for example, in the service of, or a customer of, the controller or his subcontractor. A ground of this kind is held to exist when data required for ordering and implementing timber harvesting and forestry jobs that are the object of an agreement are processed.

Controller refers to a party for whose purposes the personal data are processed. Controllers according to the Data Protection Regulation comprise customers with regard, for example, to information on the parties to a forest sale, i.e., the forest owner, and forestry contractors with regard, for example, to personal information on forest machine users. When a customer transfers to a forestry contractor personal data as part of the data required for implementing the contract, the forestry contractor usually acts as the processor of these personal data. If these data are processed in the forest machine manufacturer's systems, the forest machine manufacturer is also a processor of personal data. Unnecessary gathering and processing of personal data shall be avoided.

Personal data processed in the information systems of forest machines are data on the machine driver and the forest owner. In practice, these are different types of personal identifying and contact data but the data can also contain, for example, the persons' location data. In addition, the contact data of persons in the service of a forestry contractor, subcontractor or customer can be processed (see definition of personal data in Data Protection Regulation in Annex 2).

A service provider whose, e.g., machine undertaking customer saves the personal data contained in the forest machine's information system in the service provided and administers these in the service can be regarded as a processor of personal data. Cloud services provided to a machine undertaking by a forest machine manufacturer or other outside service provider can be regarded as services of this kind.

There shall be a written agreement on the processing of personal data between a service provider (processor) and buyer (controller), in which at least the matters required in the general Data Protection Regulation have been agreed on. The service provider shall for his part ensure that it complies with the obligations of the general Data Protection Regulation and [that], inter alia, personal information is not processed unnecessarily in services and applications supplied by it and that it is possible in them, if necessary, to delete personal data or to alter them so that the data can no longer be linked to a natural person.

Forestry contractor's obligations and recommendations relating to data protection

General obligations

- A forestry contractor bears, as controller, principal responsibility for the processing of personal data, and as processor of personal data is responsible for ensuring that personal data are processed in accordance with the obligations of the EU Data Protection Regulation. The forestry contractor shall in addition be able to show that the obligations of the EU Data Protection Regulation are complied with. This requires a description and documentation of the processes of information processing, attending to information security, written agreements between the controller and processor, proper instructions and training on measures of processing personal data, and informing the data subject of the processing of personal data. When the contractor has agreements with several customers, care shall be taken to ensure that the customer's data are not transferred to another customer.

Forest owner data

- The customer as controller bears overall responsibility for ensuring that the forest owner's personal data are handled properly.
- Data on a forest owner shall be processed in accordance with the written instructions presented by the customer and shall not be used for any purpose other than is necessary for implementing the work that is the object of the assignment.
- An contractor is not entitled to release data unless the customer's permission to do so exists. If data are released, for example, for the purposes of training or testing, the party releasing the data is responsible for deleting all of the forest owner's personal data from them. For the purposes of repairs and servicing of a forest machine's information system, the party performing the servicing can process the data for carrying out the repair and servicing without separate permission from the customer. Data in the possession of the party performing the repair and servicing shall be deleted immediately after the repair or servicing.
- Data shall be protected properly in their different formats and different devices.
- Data may be stored only as long as is necessary for producing the service. Afterwards, they must be destroyed.
- The customer shall be notified immediately of information security breaches and helped to investigate them.
- The forest owner's name or other individualising information, such as the property code, on the basis of which it would be unequivocally possible to ascertain the forest owner's personal data, shall be avoided as the name of a marked stand or sub-marked stand. Files shall also not be named so that information individualising the forest owner would be used in them.

Processing of personal and business data

When forest machine data containing personal data are released to operators outside the contracting parties of timber harvesting and forest management jobs (including subcontracting agreements) or when these are processed in information systems or applications that do not relate directly to the assignment that is the object of the agreement or otherwise to the operator's business activity, the personal data shall either be deleted from the data

completely, if possible, or processed in such a way that personal data can no longer be linked to a specific data subject without using additional data (pseudonymisation) or rendered anonymous in such a way that they can in no way be linked to a natural person (anonymisation). The deletion or anonymisation of data is the responsibility of the party surrendering the data. It is recommended that personal data be deleted or anonymised always before release of the data. If the deletion or alteration is done by order of the owner of the information by an operator outside the contracting parties, the processes of the data processing shall be verifiable in all respects. In that case, the operator in question shall be able to demonstrate that the data in the data warehouse or register that is to be formed are according to the assignment and that the original data containing the personal data have been destroyed after processing. It is likewise appropriate and recommended to anonymise the identifying data relating to the undertaking when using the data for purposes other than those in which the business data are necessary as regards use.

The appearance of personal data in forest machine data has been described previously in section 2. The recommendations relating to the processing of data on a forest owner and to employees' monitoring data are described in section 4.

4. Detailed requirements relating to use and surrender of data

Data on the forest owner, property and location of the marked stand

The statutes on personal data shall be taken into account in accordance with what is described in section 3 and Annex 2, if individualising data on a forest owner, wood seller or property are registered or are transferred to parties other than the forest owner, wood buyer or undertaking producing timber harvesting, forest management work or other work performance according to the agreement between the abovementioned parties. As a rule, personal data are not surrendered to other parties.

It is recommended that the property identifier be processed in the relationship between the customer and forestry contractor as personal data. The processing of personal data shall always be necessary in relation to the use of the data. In that case, enforcement of the agreement is the use of the data.

The location information on the forest is regarded as forest resource information, which is not personal information. The co-ordinates of boundaries of a marked stand or work object that originate from the customer and other location data of objects marked on the work site map can be used in the planning and control of timber harvesting, long-distance transportation of timber and forest management jobs, and in organising work sites and servicing of machines without separate agreement.

Timber measurement data

This recommendation does not apply to the processing of measurement data but, there, the obligations of the Timber Measurement Act (414/2013) and of decrees and official regulations defining it are complied with. Under the Act, the owner of a felling right notifies the forest owner of the measurement result by supplying him with the measurement document referred to in section 22 of the Timber Measurement Act. The measurement party shall upon request give the other measurement party, in addition to the measurement result, data on the basis of which the measurement result can be calculated. The measurement document data shall be stored for five years from the ending of the measurement operation.

Data on timber products and cross-cutting

Block-specific data describing measurement and cross-cutting shall not be transferred or released from the felling machine or from the timber harvesting undertaking's cloud service or other equivalent service to an information system outside the harvesting contracting parties without separate agreement with the owner of the data. It is also not permitted to transfer measurement data in which the wood products' codes or other identifying data have been described and that reveal the control data used in cross-cutting. The above does not apply to applications purchased by the timber harvesting undertaking as a service that it uses for implementing the work that is the object of the order, inter alia, for reporting of measurement data and measurement precision and for monitoring and rendering more effective the timber harvesting undertaking's internal work.

Monitoring data relating to employees

The work machines' information systems can be used to gather location data, time data, quantity data and other data that can be used to determine the employee's pay, to organise the quantitative and qualitative monitoring of work done by the employee, and to improve occupational safety.

The employer may process only personal data relating to the machine driver or other employee that are directly necessary for the employment relationship, and that relate to managing the rights and obligations of parties to the employment relationship or to benefits provided by the employer to employees or are due to the special nature of the work tasks. No exceptions can be made to the necessity requirement even with the employee's consent (Act on the Protection of Privacy in Working Life, section3).

Use of a positioning system in monitoring is justified for the sake, inter alia, of property protection (employer's car and machine in employee's use), occupational safety, logistic control, targeting of quality monitoring, or work outside the employee's opportunity to supervise. Use of positioning data on employees gathered with the aid of a positioning system shall be publicised adequately at the workplace, so that all employees are aware of the purpose of the positioning and of the processing of their personal data in connection with positioning. A monitoring service based on positioning can be bought from an outside service provider, for example, a machine manufacturer.

Transfer of data produced by forest machines and processed by it [sic] to an outside system or service

Verification of data imported into a receiving system shall be transparent to all parties and there shall exist the requisite technical description of the system's data-processing, by means of which the data used can be verified. If modifications of files have to be made, it shall be defined more precisely at what stage the modifications are to be made: before sending the data in the machine or in the receiving system.

Information security

To maintain the information security of the forest machine's information systems, the instructions of the administrators of the information system services are to be complied with and software and data are to be protected in accordance with the given instructions. The user of the forest machine's information system is liable for complying with the instructions given. Information security threats comprise unauthorised access to information systems, unauthorised use or use of data that is in breach of contracts, and failure to delete data. The owner of proprietor of a replacement machine who has used the machine and information systems in the machine in

his business activity is responsible for ensuring, when surrendering the machine, that earlier data are always deleted from the information systems of replacement machines and for making sure also that paper printouts or reports are not left in the machines when they are surrendered.

Data are protected and disposed of in accordance with the principles of the EU Data Protection Regulation. In order to guarantee information security in accordance with the Data Protection Regulation, data ought to be saved only in data warehouses that are on servers located within the territory of the European Union.

5. The principles of standardisation of forest machine data

The international StanForD standard has been defined for information management of forest machines and for information transfer between machines and their external information systems, and jointly agreed between operators. The standard has been in use since the end of the 1980s and currently a second-generation XML-based version of it is being introduced (StanForD 2010). The principal purpose of the standard has been to standardise the information management of the machines' measurement devices, the functions of cross-cutting control, management of work site data and the formation and reporting of production data and the machines' productivity and time data. The standard is by its nature technical, and it does not contain what are termed business activity messages. The standard also does not cover machine-make-specific data on the machine's resource planning system and operational control. In practice, all machine manufacturers support the standard in their own software, likewise the forest undertakings' and forestry contractors' information systems. Owing to the structured method of presenting the information, the new StanForD 2010 files form a good starting point for broad-scale utilisation and application development of forest machine data.

SPECIFICATION OF RIGHTS OF OWNERSHIP AND USE OF FOREST MACHINE DATA**16th October 2017**

O = Right of ownership

The right to access information and determine the use of information in all respects. With regard to some information groups, the right of ownership is enjoyed by both contracting parties of the timber harvesting and forest management jobs. The right belongs to both contracting parties independently separately, unless agreed otherwise.

K = Right of access

The right to access information for the purpose and to the extent required by the assignment and in developing one's own business activity, but not to grant rights of use, or to transfer or surrender data to other operators.

RK = Limited right of access

The right to use information for a limited purpose on the basis of an agreement concluded with the owner of the information. No right to grant rights of use or to transfer or surrender data to other operators. Examples of limited right of access are the utilisation of forest machine data in machine manufacturers' product and service development, in system suppliers' application development, research and development work, and teaching.

A. Felling machine data

Number of data group	Description of data group	StanForD 2010/ StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	Contractor		
A1. Data required in implementation of work sent to the felling machine						
A1.1	Work site and harvesting guideline data including map data and general guidelines on harvesting work	*.oin / *.oai *.ogi / *.ghd WoodForce's or customer's own files	O	K	RK	RK
A1.2	Timber product guidelines (timber-product data and cross-cutting control data), the mills' quality requirements and general guidelines, the mills' quality feedback	*.pin / *.apl other file	O	K	RK	RK

Number of data group	Description of data group	StanForD 2010 /StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	Contractor		
A1.3	Wood product guidelines	*.spi / *.spp ³⁾	K	K	K	K
A2. Data produced by the felling machine's information system or data formed in the customer's application						
A2.1	Production data - log-specific measurement and location data - total production data	*.hpr / *.stm, *.pri *.thp / *.prd	O	K	RK	RK
A2.2	Working hours and productivity data	*.mom / *.drf *.hpr's logs' time-stamp data	1)	O	RK	RK
A2.3	Calibration and control measurement data of measurement device	*.hqc *.ktr	O	O	K	RK
A2.4	Follow-up report on measurement precision	Machine make-specific pdf report	K	O	RK	RK
A2.5	Feedback of harvesting object's location information from machine (including roadway recordings)	*.ogr / *.ghd Other	O	K	RK	RK

Number of data group	Description of data group	StanForD 2010 / StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	Contractor		
A2.6	Data on self-supervision of harvesting quality - final assessment test area measurements	*.udd -structure in hpr WoodForce's or other application's files	○	○	RK	RK
A2.7	Data on criteria for invoicing of harvesting	(* .udd) Other	-	○	-	RK
A3. Machine make-specific and non-standardised data produced by the felling machine						
A3.1	Harvesting emission data (e.g., CO ₂ , nitrogen oxides and particles)	machine manufacturer's file	2)	○	RK	RK
A3.2	Fuel consumption data	machine manufacturer's file	2)	○	RK	RK
A3.3	Other data	machine manufacturer's file	RK	○	RK	RK
A3.4	Machine location and status (situation information)	machine manufacturer's file	K	○	RK	RK
A4. Potential new data to be produced by felling machine <i>Defined when the methods of producing the data are advanced and there exist the requirements for accessing the data.</i>						

- 1) Right of access to general productivity information on the type of work (data warehouse), in which there are no work site, driver, machine undertaking or customer-specific data. The data warehouse's technical implementation method and organisation are defined separately between the parties that signed this recommendation.
- 2) Right of access to the warehouse of emission data on the type of work. The technical method of implementation of, organisation of, and rights of use to the production of information and the data warehouse are defined separately between the parties that signed this recommendation.
- 3) The Spi file is the standard file used in the felling machines' and forwarders' measurement systems, giving the tree- and log type-specific values and other data required in timber measurement. The Spi file includes the tables and parameters of the equations used in forming the diameters of the root end, according to Natural Resources Institute Finland's regulation. Metsäteho has made a recommended version of the file, which machine manufacturers have installed in their software and that customers can also use in their own information systems and pass on to forest machine applications. The Spi file is updated only when amendments need to be made to the timber measurement settings. The measurement device manufacturer is responsible for ensuring that the spi file of its latest measurement device software contains values according to the regulations and recommendations at the time and the country-specific settings required in timber measurement and that the requisite file updates can be done. For this reason, the right of ownership to the file lies with the measurement device manufacturer.

B. Forest tractor data

Number of data group	Description of data group	StanForD 2010 / StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	contractor		
B1. Data required in implementation of the work that are sent to the forest tractor						
B1.1	Work site and warehouse location data and forest transport guidelines including map data	*.foi *.ogi / *.ghd WoodForce's or customer's own files	O	K	RK	RK
B1.2	Delivery data (forest transport's timber product data to machine)	*.fdi *.spi / *.spp ³⁾	O K	K K	RK K	RK K
B1.3	Wood product guidelines	*.spi *.spp ³⁾	K	K	K	K
B2. Data produced by the forest tractor's information system or data formed in the customer's application						
B2.1	Production data (load-specific quantity data of forest transport)	*.fpr / *.prl	O	K	RK	RK
B2.2	Working hours and productivity data	*.mom / *.drf * time-stamp data of frp's loads	1)	O	RK	RK
B2.3	Calibration and control measurement data of loader weighing machine	*.fqc	O	O	K	RK

Number of information group	Description of information group	StanForD 2010 /StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	Contractor		
B2.4	Data on self-supervision of harvesting quality <ul style="list-style-type: none"> - final assessment - test area measurements 	*.udd structure in fpr WoodForce's or other application's files	O	O	RK	RK
B2.5	Data on criteria for invoicing of harvesting	*.udd structure in fpr otherfile	-	O	-	RK
B3. Machine make-specific and non-standardised data produced by the forest tractor						
B3.1	Harvesting emission data (e.g.,CO ₂ , nitrogen oxides and particles)	machine manufacturer's file	2)	O	RK	RK
B3.2	Fuel consumption data	machine manufacturer's file	2)	O	RK	RK
B3.3	Other data	machine manufacturer's file	RK	O	RK	RK
B3.4	Machine's position and status (situation information)	machine manufacturer's file	K	O	RK	RK
B4. Potential new data to be produced with forest tractor <i>Defined when the methods of producing data are advanced and there exist the preconditions for accessing the data.</i>						

- ¹⁾ Right of access to general productivity information on type of work (data warehouse), in which there are no work site, driver, machine undertaking- or customer-specific data. The technical method of implementation and organisation of the data warehouse are defined separately between the parties that signed this recommendation.
- ²⁾ Right of access to warehouse of emission data on type of work. The technical method of implementation of, organisation of, and rights of use to, the production of information and the data warehouse are defined separately between the parties that signed this recommendation.
- ³⁾ The Spi file is the standard file used in the felling machines' and forwarders' measurement systems, giving the tree- and log type-specific values and other data required in timber measurement. The Spi file includes the tables and the parameters of the equations used in forming the diameters of the root end according to Natural Resources Institute Finland's regulation. Metsäteho has made a recommended version of the file, which machine manufacturers have installed in their software and that customers can also use in their own information systems and pass on to forest machine applications. The Spi file is updated only when amendments need to be made to the timber measurement settings. The measurement device manufacturer is responsible for ensuring that the spi file of its latest measurement device software contains values according to the regulations and recommendations at the time and the country-specific settings required in timber measurement and that the requisite file updates can be done. For this reason, the right of ownership to the file lies with the measurement device manufacturer.

C. Mechanical forest management and forest improvement jobs

Number of data group	Description of data group	StanForD 2010 / StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	contractor		
C1. Data required in implementation of work, sent to the forest management machine or device						
C1.1	Work site data and work guidelines including map data	WoodForce's file other file	O	K	RK	RK
C2. Data produced by forest management machine or device or data formed in customer's application						
C2.1	Implementation data (quantity data, surface area etc.)	other file	O	K	RK	RK
C2.2	Working hours and productivity data	(* .mom / * .drf) other file	1)	O	RK	RK
C2.3	Data on self-supervision of quality of work - final assessment - test area measurements	WoodForce's or other application's files	O	O	RK	RK
C2.4	Data on criteria for invoicing of work	other file	-	O	-	RK

Number of data group	Description of data group	StanForD 2010/ StanForD file or other file	Operator			
			1. Contracting parties		2. Machine manufacturers	3. Other service providers and information users
			Customer	Contractor		
C3. Machine make-specific and non-standardised data product by the forest management machine						
C3.1	The forest management machine's emission data (e.g.,CO ₂ , nitrogen oxides and particles)	machine manufacturer's file	2)	O	RK	RK
C3.2	Fuel consumption data	machine manufacturer's file	2)	O	RK	RK
C3.3	Other data	machine manufacturer's file	RK	O	RK	RK
C3.4	Machine location and status (situation information)	machine manufacturer's file	K	O	RK	RK
C4. Potential new data produced with the forest management machine <i>Defined when the methods of producing data are advanced and there exist the preconditions for accessing the data.</i>						

¹⁾ Right of access to general productivity data on type of work (data warehouse), in which there are no work site, driver, machine undertaking or customer-specific data. The method of technical implementation and organisation of the data warehouse are defined separately between the parties that signed this recommendation.

²⁾ Right of access to general warehouse of emission data on type of work. The data warehouse's technical method of implementation, organisation and access rights are defined separately between the parties that signed this recommendation.

The general principles, aims and obligations of the EU Data Protection Regulation and legislation

The EU's General Data Protection Regulation entered into force in May 2016 (<http://eur-lex.europa.eu/eli/reg/2016/679/oj>). It will be applied starting from 25th May 2018, when the processing of personal data must be according to the Data Protection Regulation. The Regulation supersedes the provisions of the 1995 Data Protection Directive (95/46/EC) and of the Personal Data Act (523/1999), given for enforcing it nationally, in so far as the processing of personal data lies within the scope of application of the Regulation. To support compliance with the obligation of the Regulation, sanctions that are stricter than in the Personal Data Act have been prescribed for processing of personal data that is contrary to the Regulation. The supervisory authority can, for example, order corrective measures and administrative fines relating to processing of personal data.

The purpose of the Data Protection Regulation is to increase the openness and transparency of the processing of personal data and to confirm the rights of data subjects to supervise the processing of their personal data. The Data Protection Regulation applies to all organisations processing personal data belonging to its scope of application, controllers and processors of personal data alike. The Data Protection Regulation lays down the principles relating to the processing of personal data, guiding the controller to deal with personal data [and] the rights and freedoms of the data subject respectfully. The Regulation renders more precise the principles of the Personal Data Act.

The following principles relating to the processing of personal data have been defined in the Data Protection Regulation:

1. The following requirements shall be complied with in relation to personal data:
 - a) they shall be processed lawfully, fairly and in a transparent manner in relation to the data subject ("lawfulness, fairness and transparency");
 - b) they must be gathered for specified, explicit and legitimate purposes, and not further processed in a manner that is incompatible with these purposes ("purpose limitation");
 - c) personal data shall be adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed ("data minimisation");
 - d) personal data shall be accurate and where necessary up to date; every reasonable step must be taken to ensure that personal data that are inaccurate, having regard to the purposes for which they are processed, are erased or rectified without delay ("accuracy");
 - e) they shall be kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the personal data are processed ("storage limitation");
 - f) they shall be processed in a manner that ensures appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organisational measures ("integrity and confidentiality").
2. The controller shall be responsible for, and be able to demonstrate compliance with, paragraph 1 ("accountability").

The principle of data protection by default signifies that the controller shall by default process only personal data that are necessary for each specific purpose of processing. The obligation applies to the quantity of personal data collected, the scope of the processing, storage time and availability. With regard to the Personal Data Act, what is new in the Regulation is accountability relating to the controller, according to which the controller shall be able to

demonstrate that the principles of the Regulation are complied with also in practice. Accountability requires documentation of the practical implementation of the processes relating to processing and of the principles of data protection as well as the technical and organisational measures required for accounting.

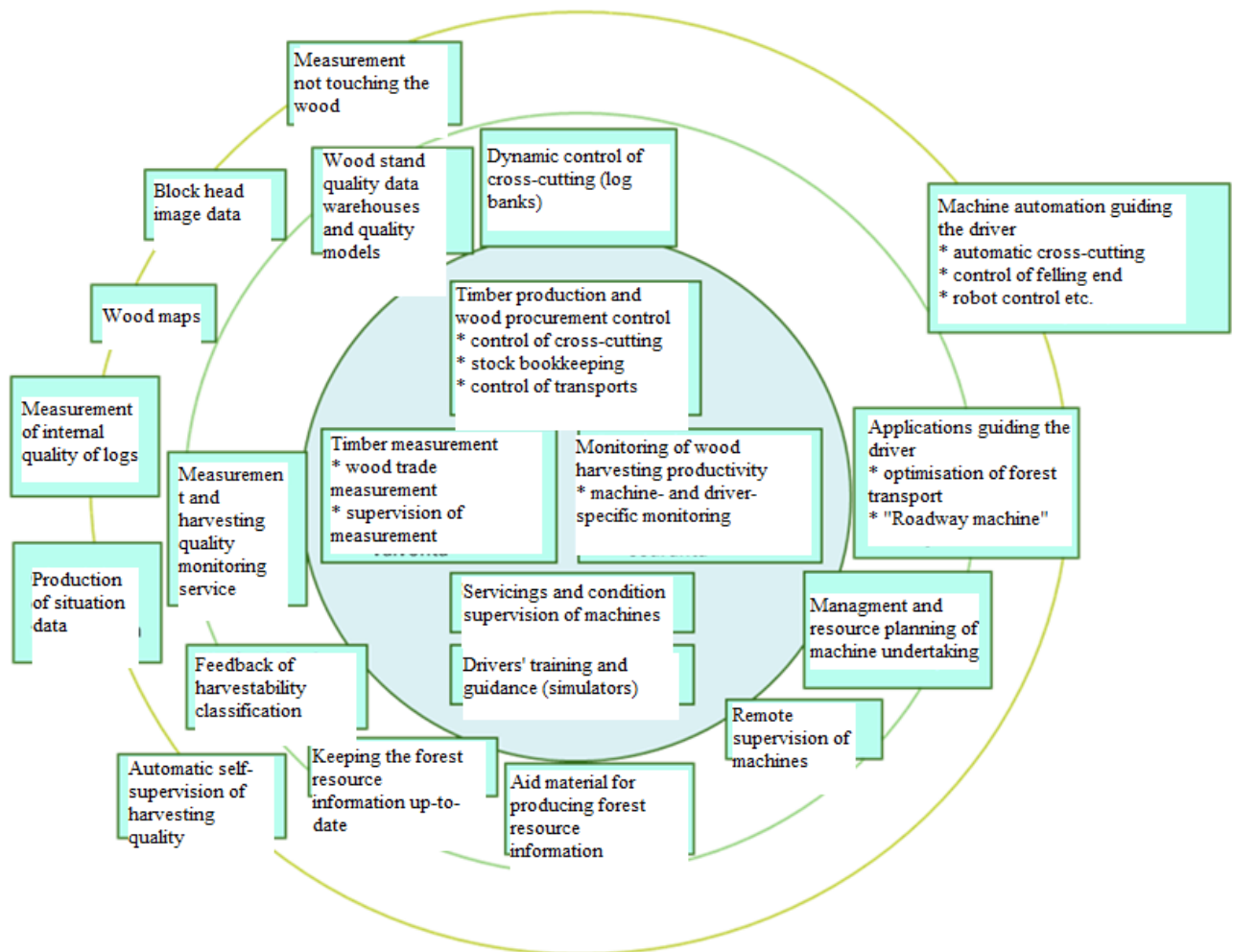
In the Data Protection Regulation, personal data refer to all data relating to an identified or identifiable natural person. A natural person who can be directly or indirectly identified on the basis especially of identifying data, such as a name, identification number, location data, online identifier or one or more factors specific to physical, physiological, genetic, mental, economic, cultural or social identity is regarded as identifiable. Filing system [register] refers in the Data Protection Regulation to any structured set of personal data which are accessible according to specific criteria, whether centralised, decentralised or dispersed on a functional or geographical basis.

There must always be a legal ground for processing prescribed in law for processing of personal data and for keeping a personal register [filing system]. According to the idea recorded in the Data Protection Regulation, a ground exists when there is a relevant and appropriate relationship between the data subject and the controller—the data subject is, for example, the controller's client or in his service. The controller is entitled to store personal data in an identifiable form in the filing system only as long as necessary for the purposes for which the personal data are processed.

Tasks relating to the processing of personal data can be outsourced to a processor of personal data. This refers, for example, to buying data storage and analysis services from another organisation. The controller shall identify the requirements of the Data Protection Regulation for outsourcing the processing of personal data since, in the Data Protection Regulation, the role and obligations of the processor of personal data have been sharpened compared to the Personal Data Act.

Protection of personal data shall be attended to in all stages of processing, starting from the gathering of data and ending with the disposal of data. Protection of data calls for the monitoring and supervision of the processing of personal data. As a new feature, the Data Protection Regulation prescribes the controller's obligation to notify the data protection authority and data subject of a breach in the information security of data. Breach in information security refers to a breach resulting in accidental or unlawful destruction, loss, alteration, unauthorised disclosure of personal data, or access to data.

Potential new information materials of forest machine information and their fields of use



The figure shows in the innermost ring the present principal areas of use of forest machine information.

In the middle ring are the areas of use that can be introduced in the years to come, but that still require development work or productisation.

The outermost ring describes potential new applications based on information produced by forest machines that are only at the concept testing level and require research and product development.