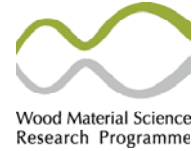


# Innovate wood



## Integrated database for Nordic softwood

*Thomas Grahn, Örjan Hedenberg,  
Sven-Olof Lundqvist, STFI-Packforsk  
Arto Usenius, VTT*

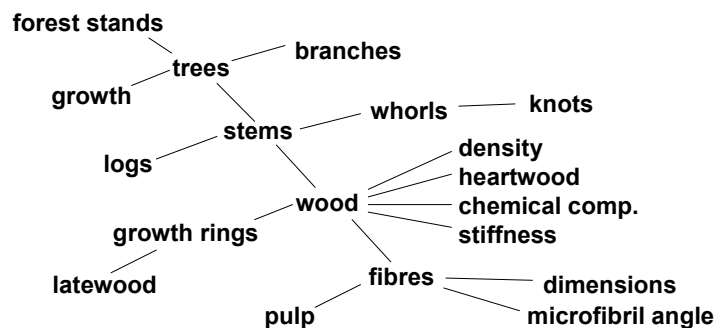
Innovood Seminar, STFI-Packforsk  
Stockholm, March 21, 2007

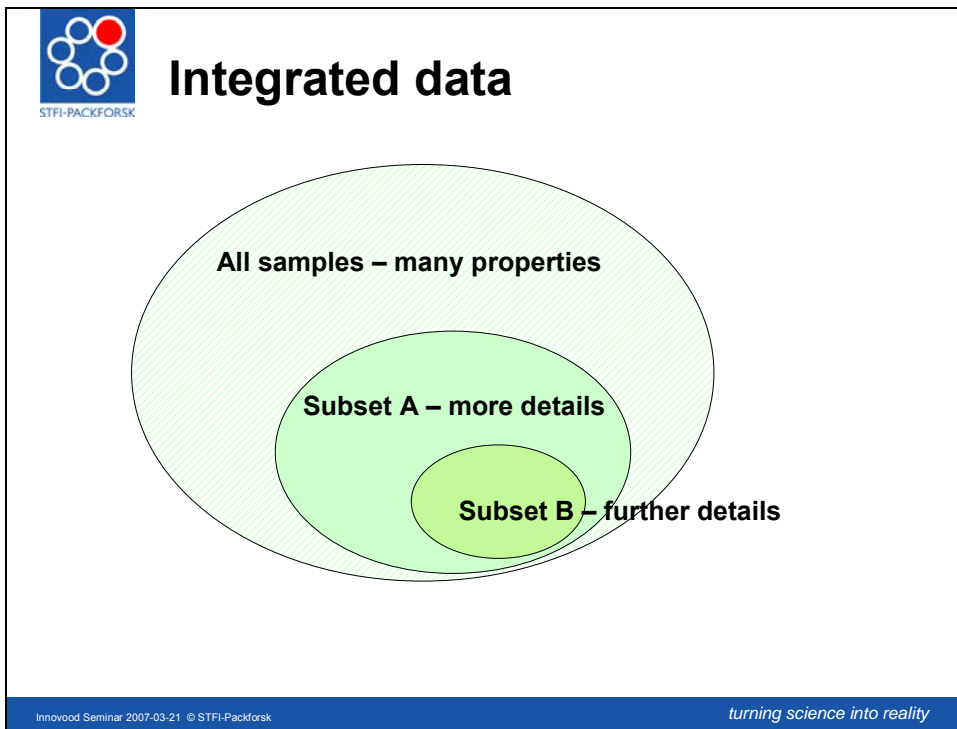


## Objective of sampling and measurements

Related information on properties

- from forest to product
- of importance for different products
- on many levels of detail (from tree to fibre)





**Sampling strategy:  
Stands and trees**

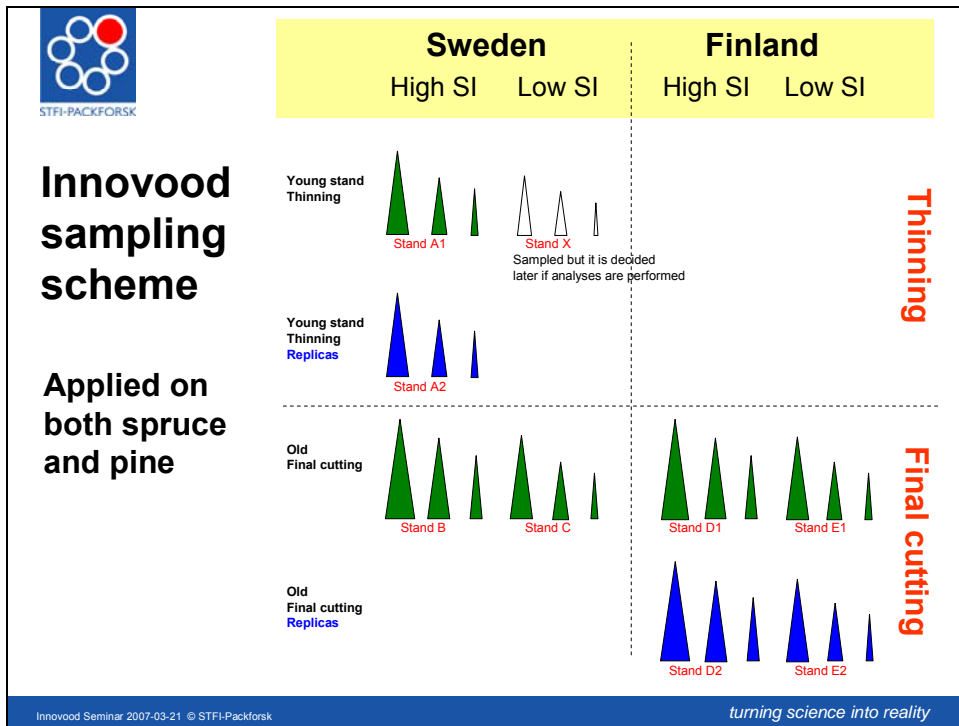
**Stands**

- spruce and pine
- old and young stands
- high and low site index
- Sweden and Finland

**Trees per stand**

3 sizes of trees  
(competitiveness)

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**Number of trees and discs**

	Sweden	Finland
<b>Spruce</b>	<ul style="list-style-type: none"> <li>• 15 trees</li> <li>• c. 20 logs</li> <li>• 65 discs</li> </ul>	<ul style="list-style-type: none"> <li>• 12 trees</li> <li>• c. 30 logs</li> <li>• 65 discs</li> </ul>
<b>Pine</b>	<ul style="list-style-type: none"> <li>• 15 trees</li> <li>• c. 20 logs</li> <li>• 61 discs</li> </ul>	<ul style="list-style-type: none"> <li>• 12 trees</li> <li>• c. 30 logs</li> <li>• 58 discs</li> </ul>


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## Stand data



Examples of data collected from all stands

- latitude, longitude, altitude
- stand age
- stems per hectare
- diameter distribution in breast height

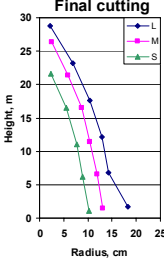
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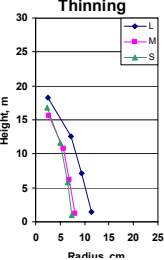
## Sampled trees, spruce (analogous for pine)

### Sweden

#### Final cutting

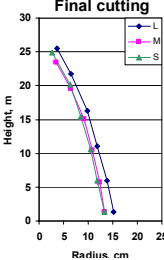


#### Thinning

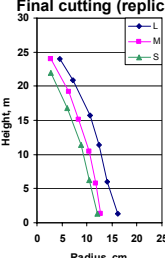


### Finland

#### Final cutting



#### Final cutting (replicas)




High site index

Low site index


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## Data on whorls and branches

Examples of data on branches of different whorls

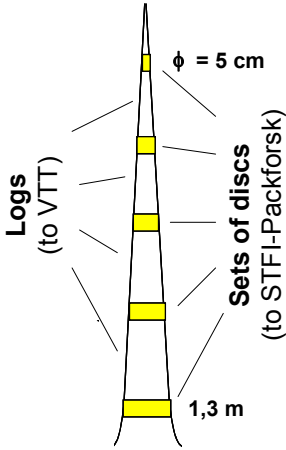
- number of living and dead branches
- branch angle
- branch length



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## Samples from different heights

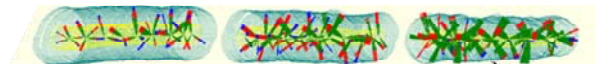


Distance between the stump and top sample	Number of sets of discs
<12 m	3 sets
12-18 m	4 sets
18-24 m	5 sets
24-30 m	6 sets
>30 m	7 sets

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## Log samples



**...sent to VTT for analysis of properties of wood, knots, etc.**