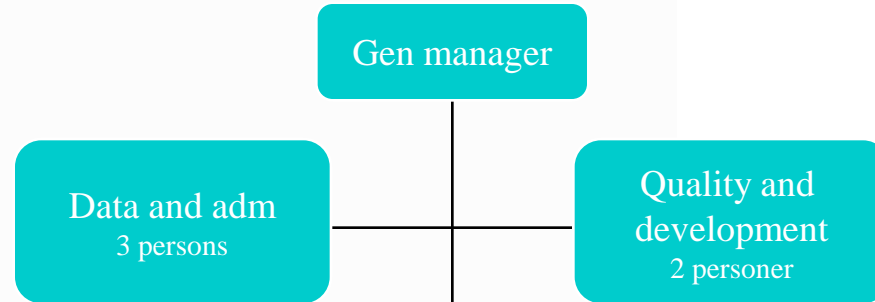




# Organization



8 region leaders  
- Quality (control)  
- Operations and management

140 scalers  
- Measurement  
- Control  
- Audits  
- Other tasks



# Many scaling stations

- In Norway there are about 75 manned scaling stations – many of them one man served and maybe open only a couple of days a week. The large number of wood receiving stations are due to fragmented forests divided by mountains.
- These stations have low quantities and are expensive to man with the high salary costs in Norway

## Therefore FOTOWEB

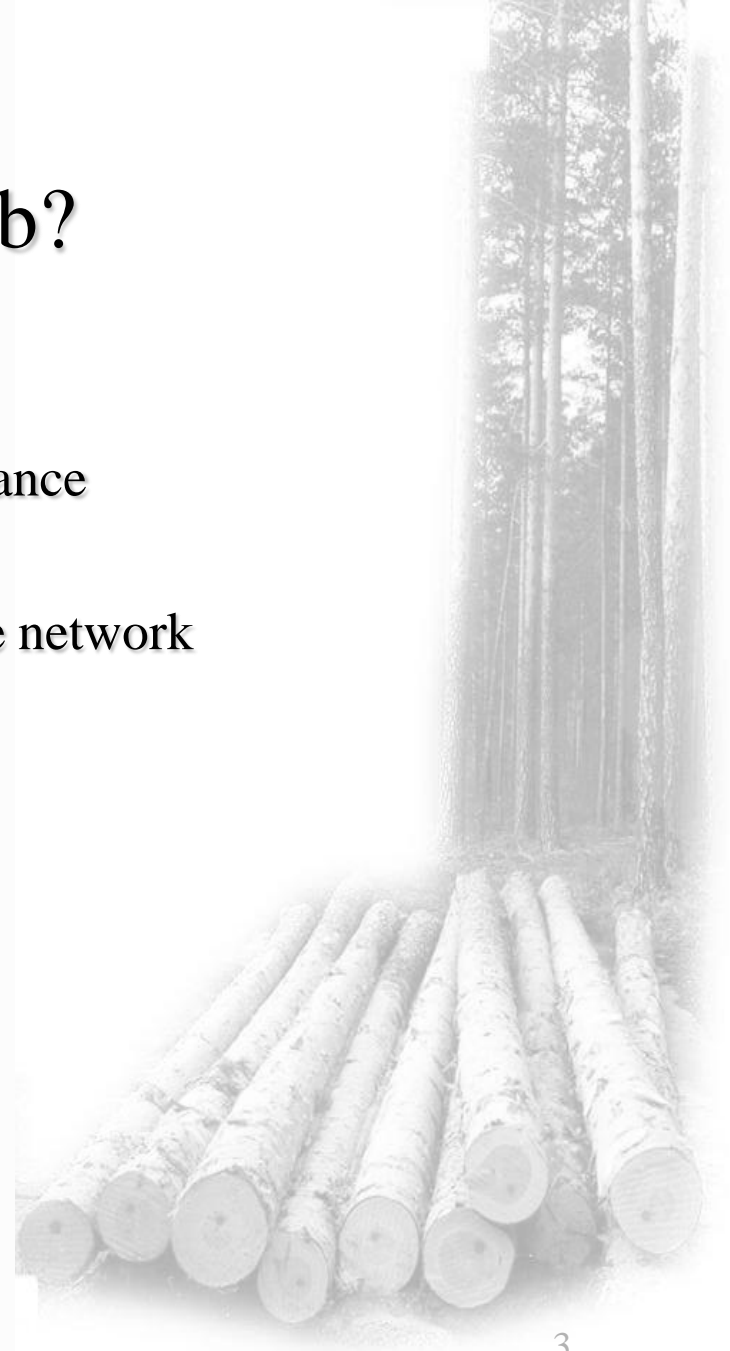
- A system where the wood receiving stations can be unmanned by scalers. Cameras on the station are operated by the truck drivers. The pictures are automatically sent over internet to a central database
- The measurement is then done on the pictures and the wood measurement can be done from anywhere.





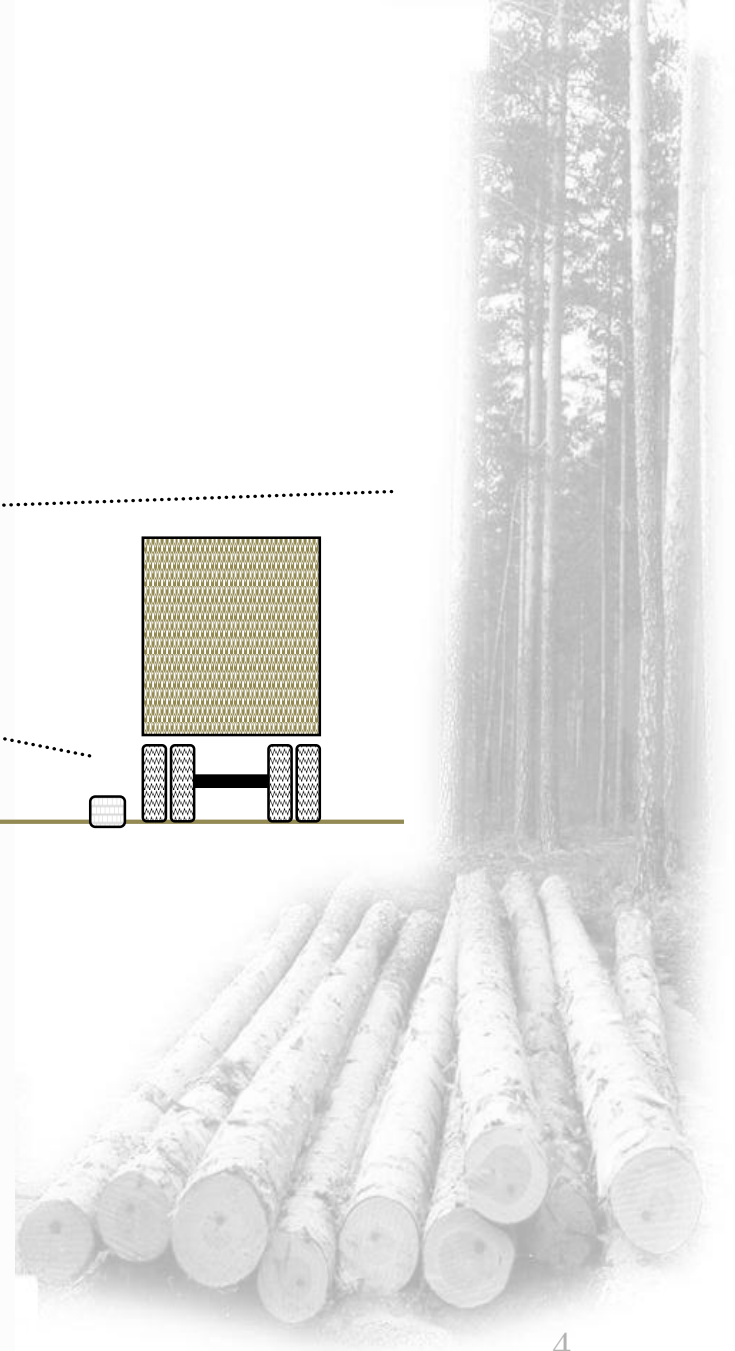
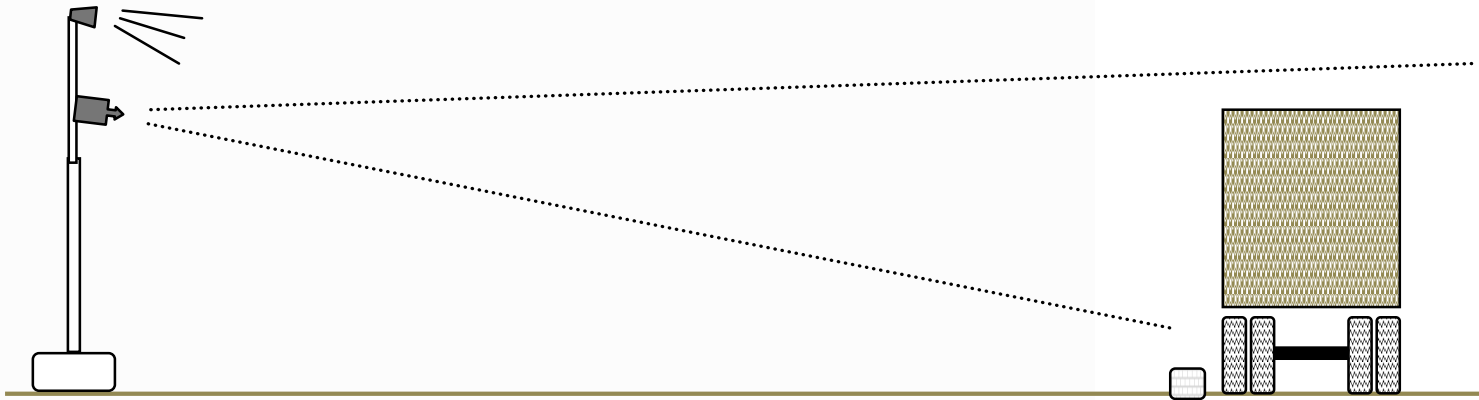
# What is fotoweb?

- The concept
  - Measuring timber on images from a distance
  - A rough and effective solution
  - A possibility to create a vast and flexible network

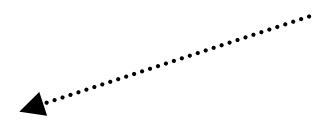
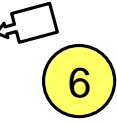
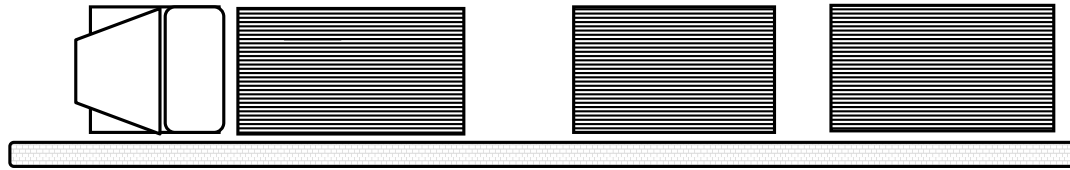




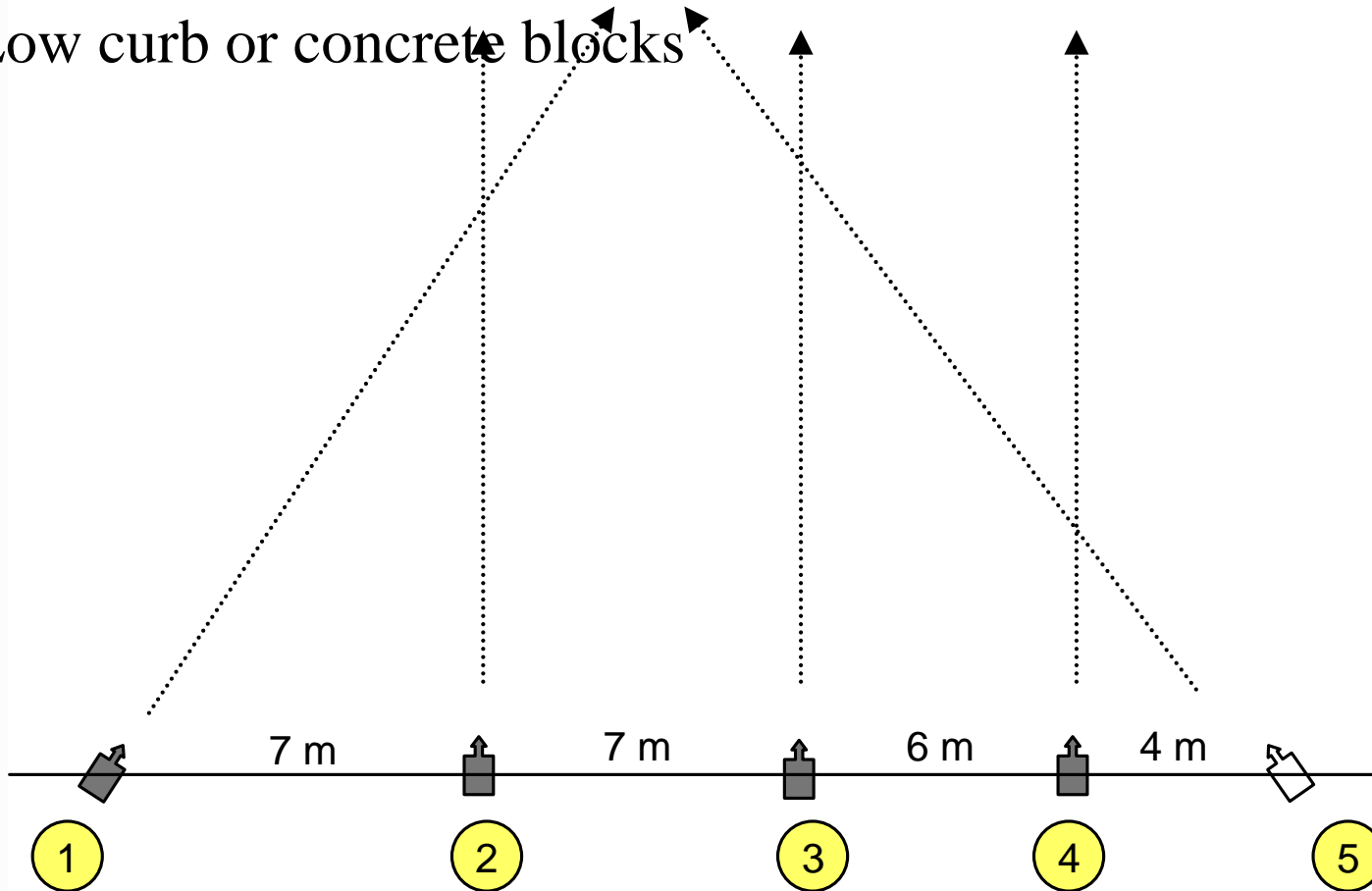
# Fotoweb



# Fotoweb



Low curb or concrete blocks

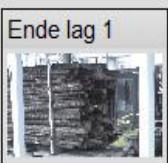


# Drivers view

Ta bilder  Send bilder  Avbryt



# Controllers view



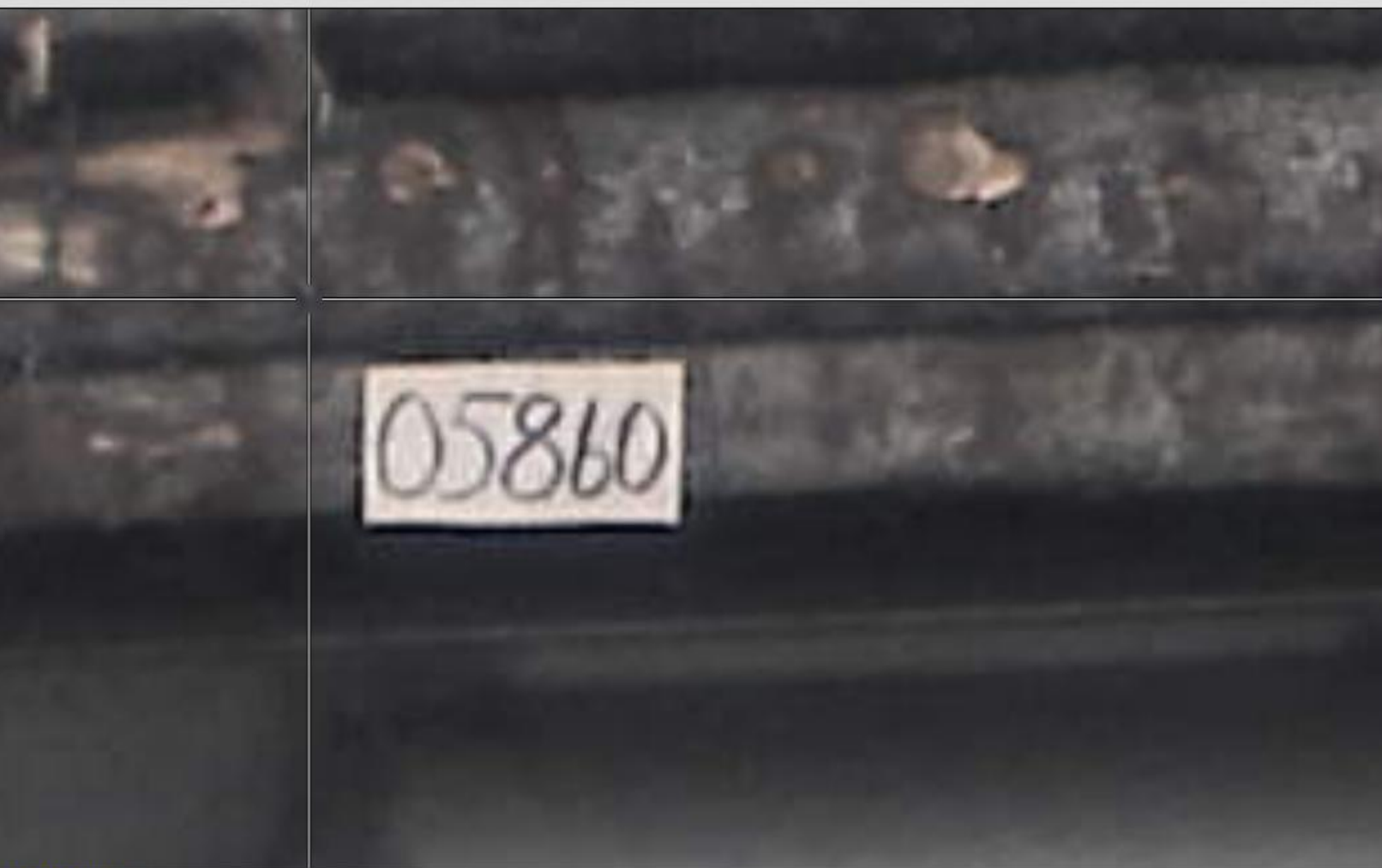
## Bildeserie 333601901

Bilder tatt 21.jul.2011 08:05 på Skogn

Tilstand: Godkjent

Årsak:

Kommentar:



### Lasskvittering

Kontraktnr 20117300

Selger 505860

Kjøreordre 16

Lasskvittering 65175005

### Sortiment

Målnummer

Sort 1 102

Sort 2 0

Sort 3 0

### Mål

Lengde 0

Bredde 0

Høyde 0

LM3 0

DB 0

MD 0

Øvrige 0

FM% 59

Vrak 0

Årsak 0

FM3 0

Lagre Nullstill

Ende lag 1



Lag 2



Front lag 2



Lag 3



Ende lag 3



### Bildeserie 333601901

Bilder tatt 21.jul.2011 08:05 på Skogn

Tilstand: Godkjent

Årsak:

Kommentar:

# Measurers view



### Lasskvittering

Kontraktnr 2011730026

Selger 505860

Kjøreordre 16

Lasskvittering 65175005

### Sortiment

Målnummer

Sort 1

Sort 2

Sort 3

### Mål

Lengde

Bredde

Høyde

LM3

DB

MD

Øvrige

FM%

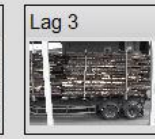
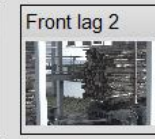
Vrak

Årsak

FM3

### Utfør måling

Til hovedmenyen



### Bildeserie 333601896

Bilder tatt 13.jul.2011 13:50 på Skogn  
Tilstand: Godkjent  
Årsak:  
Kommentar:

# Measurers view



<b>Lasskvittering</b>	
Kontraktnr	2011726020
Selger	62156
Kjøreordre	9
Lasskvittering	40151002
<b>Sortiment</b>	
Målnummer	<input type="text"/>
Sort 1	<input type="text" value="102"/>
Sort 2	<input type="text" value="0"/> <input type="text" value="0"/> %
Sort 3	<input type="text" value="0"/> <input type="text" value="0"/> %
<b>Mål</b>	
Lengde	<input type="text" value="0"/>
Bredde	<input type="text" value="0"/>
Høyde	<input type="text" value="0"/>
LM3	<input type="text" value="0"/>
DB	<input type="text" value="0"/>
MD	<input type="text" value="0"/>
Øvrige	<input type="text" value="0"/>
FM%	<input type="text" value="59"/>
Vrak	<input type="text" value="0"/>
Årsak	<input type="text" value="0"/>
FM3	<input type="text" value="0"/>
<input type="button" value="Lagre"/> <input type="button" value="Nullstill"/>	

Zoom inn Zoom ut 0.67  
Kalibrering



# Challenges

## Technical

- Lighting
- Quality

## Administrational

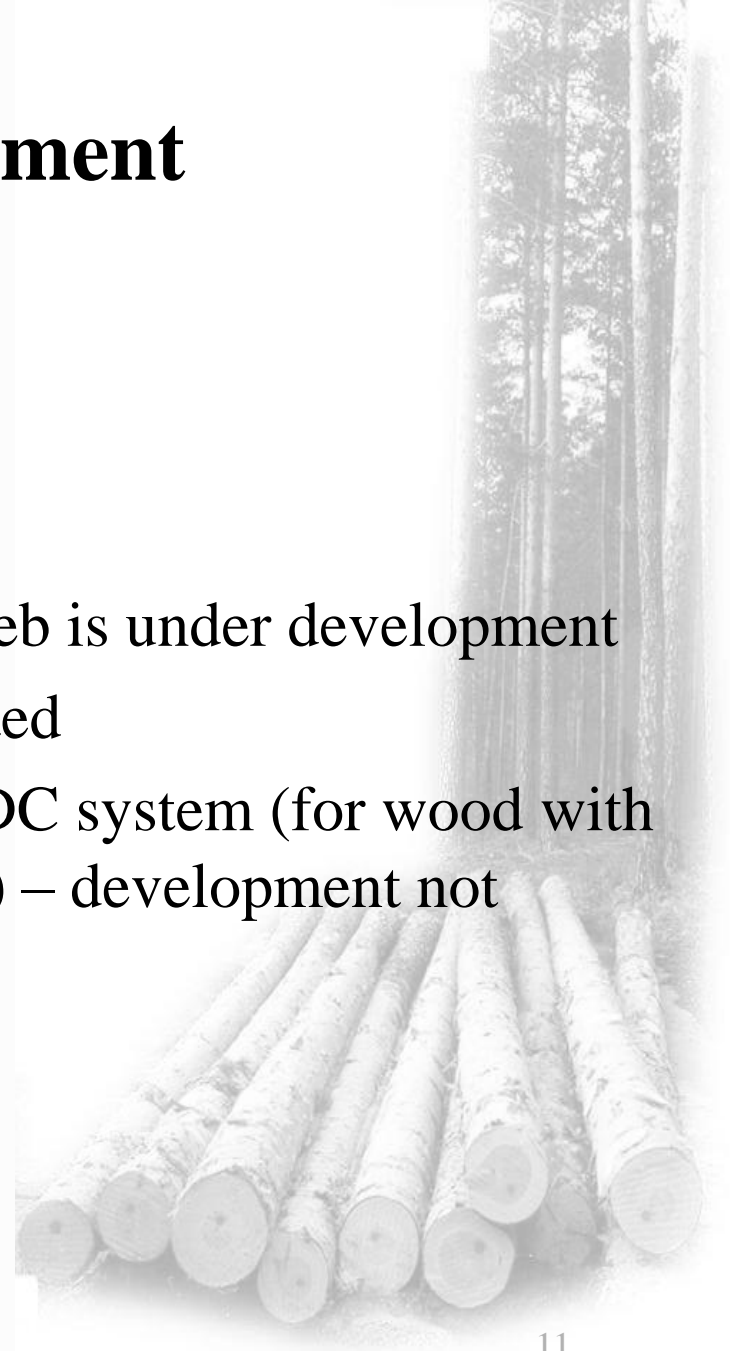
- Service
- Back up method
- Control of method





# Status development

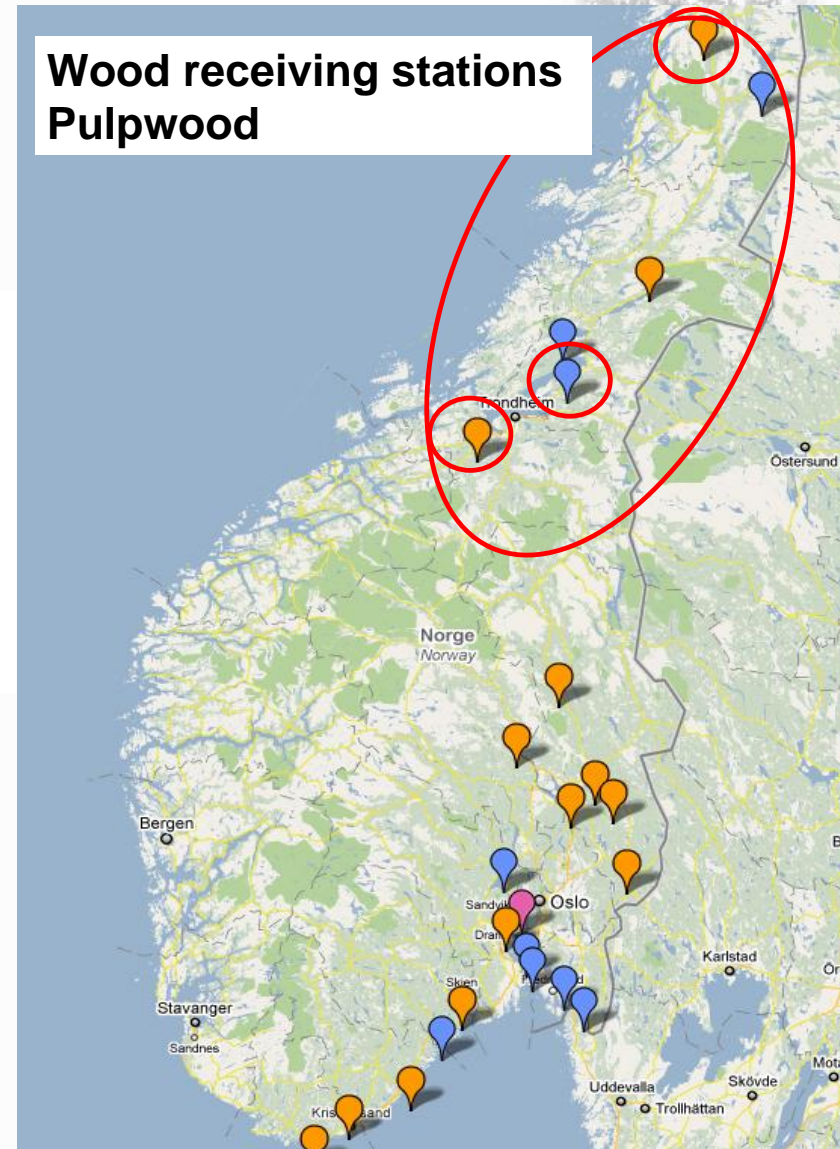
- Fotoweb for Pulpwood operative
- Fotoweb for Saw timber operative
- A system for handheld mobile fotoweb is under development
- Chip module – development not started
- Communication with the Swedish SDC system (for wood with Swedish origin measured in Norway) – development not started





# Customers so far

- Partners and long term goals
- Phase 1 in Northern Norway
- Phase 1 goals
- Covers Norwegian pulp-, saw- and energy wood



# Effects on value chain



## On one hand

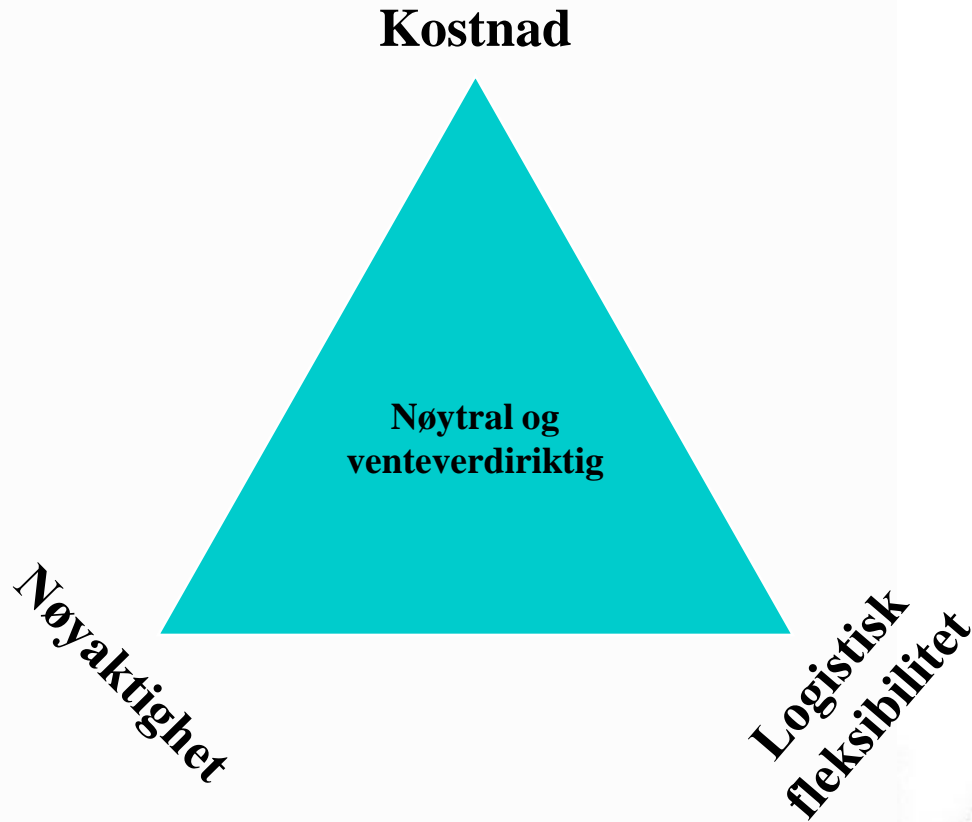
- Logistical flexibility
- Minimize problems with waiting trucks
- Size will not affect productivity
- Images as evidence and basis for discussion
- Large potential for improvements

## On the other hand

- Less precise method
- Rougher preliminary control
  - Freshness and pollution
  - Feed roller damage and insect damage
  - Separating pine chips from spruce chips
- Log by log errors
- Other services such as:
  - Storage order and security
  - Control of other merchandises



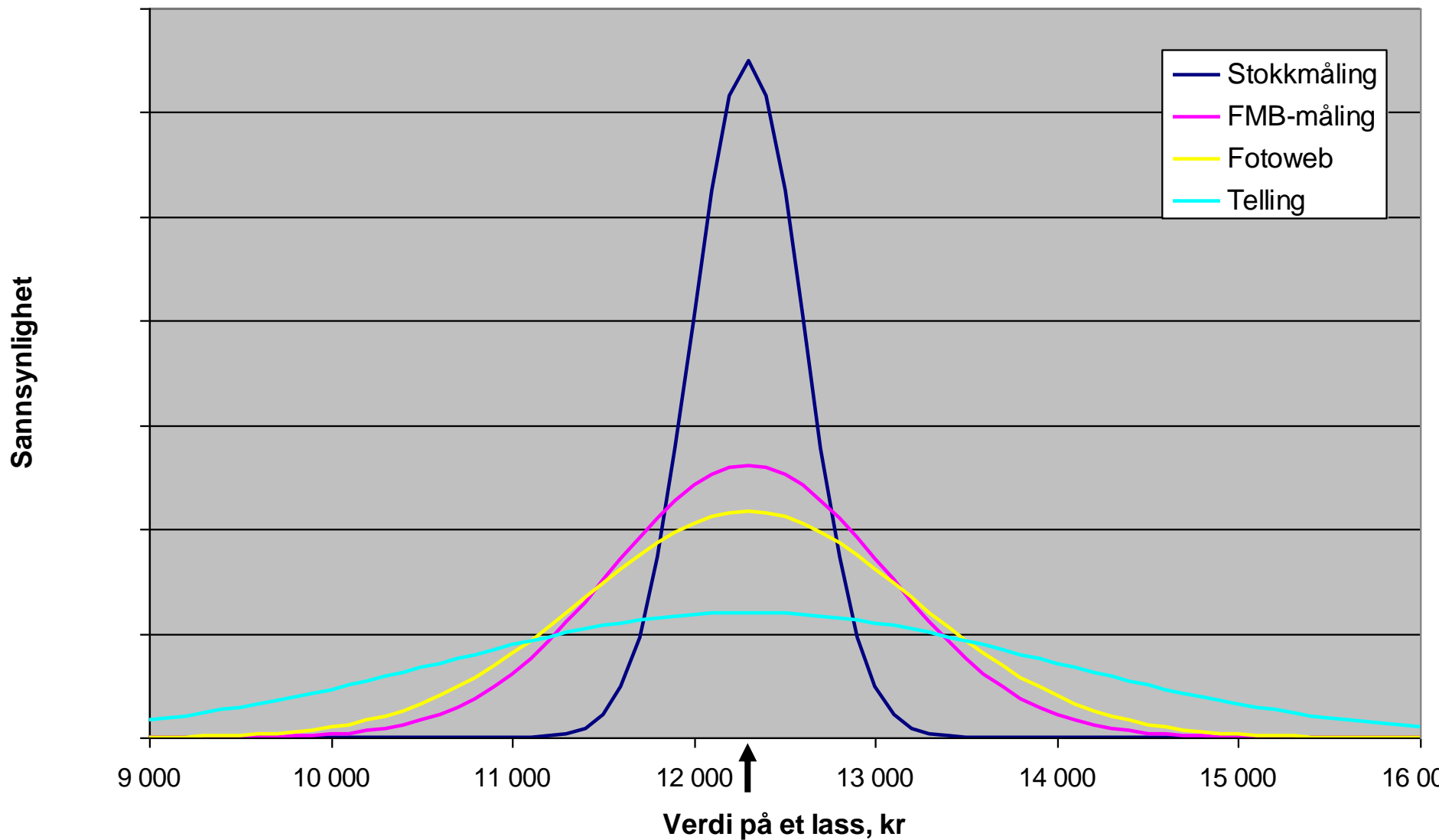
# Portefølje med målemetoder





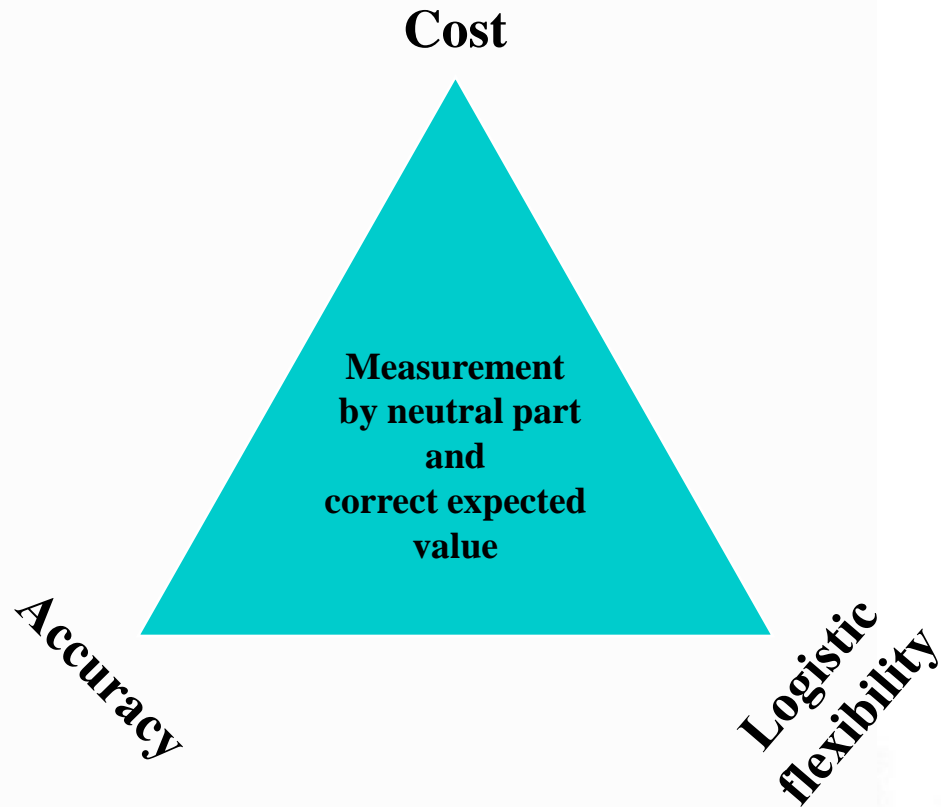
# Nøyaktighet på målemetoder

## Rundvirke





# Portfolio of measurement methods



# Accuracy

