



Measurements in the Supply Chain

TIMBER MEASUREMENTS SOCIETY
2016 CENTRAL MEETING



Nelson, BC

BOS Forestry Agenda:

- Background
- BOS Forestry Product Line
- Key Measurements
- Sample Piece Scale
- Photometric Scaling
- Financial Processing
- Quality Program source data

Follow-up questions

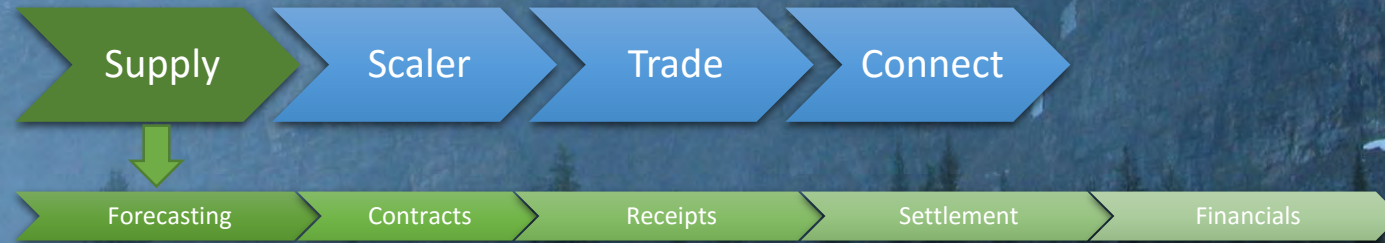
- Info@bosforestry.com



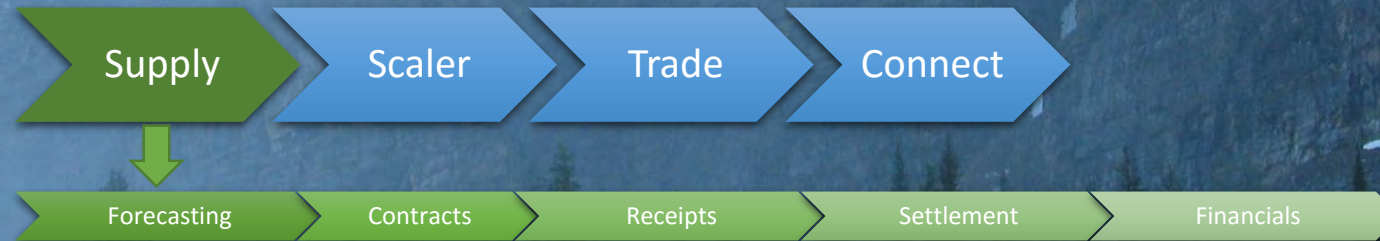
BOS Forestry Customers



Supply Chain Management solutions for the Forest Industry



Contract Management & Settlement Solution



- Finalize annual plans
- Load Forecast
- Link Forecast to BOS Geo

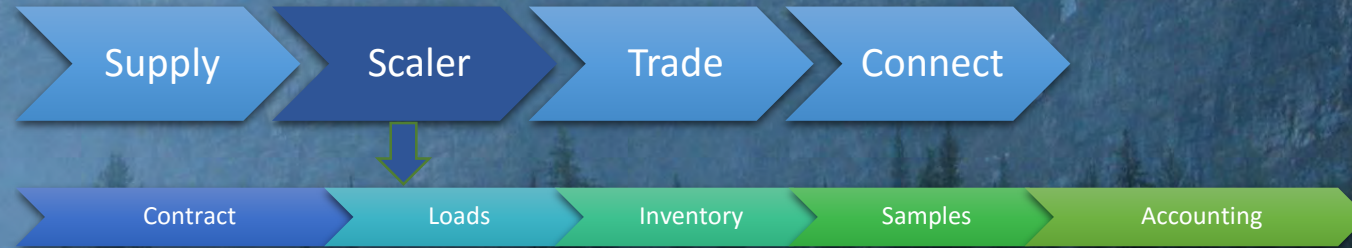
- Setup Contracts
- Link harvest areas
- Set Logging Rates
- Set Transportation Rates
- Execute Contract

- Real time load tracking
- Sample data capture
- Quality Monitoring
- Daily Ministry uploads
- Inventory visibility

- Contractor Settlement
- Log Sales Invoicing
- BOS Connect reporting

- Sync GL Account Codes
- Process E-Batches
- Print Cheques
- Send Invoices

Contract Management & Settlement Solution

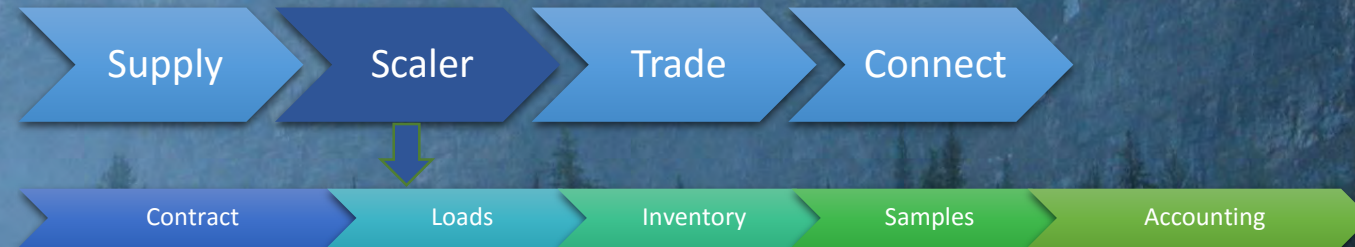
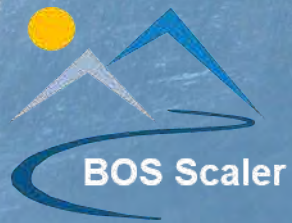


Advanced scale site solution to manage core data acquisition, quality programs and real-time cloud services.




BOS Scaler



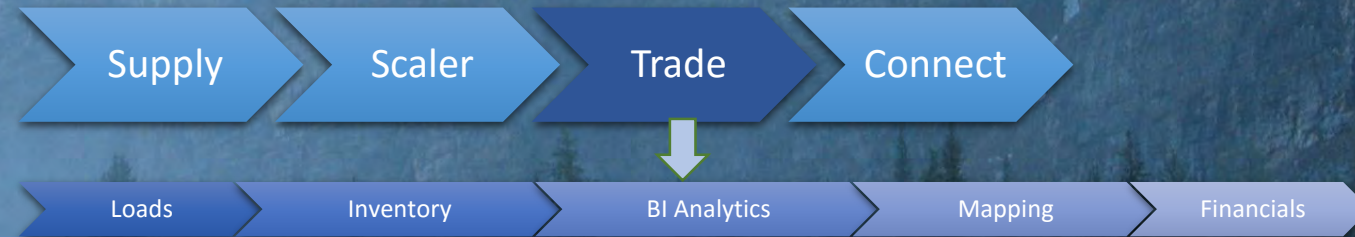


- Contracts validate load input
- Accurate data quality
- Optimized data entry
- BOS Random Sampling Selection
- Uploads in real time to BOS Trade
- monitor both local and remote inventory levels
- Handheld Sync
- Length Spec Analysis
- Infraction/Defect
- Quality Pgm Source
- Batch to Accounting
- Auto Send to Ministry

Advanced scale site solution to manage core data acquisition, quality programs and real-time cloud services.



BOS Trade is
a next generation log trading web portal serving the business to business needs of
Sawmills, Pulp Mills, Sort Yards and the regional community of Loggers and Truckers



Enabling business to business ecommerce for Forest Industry Trading Partners



Enabling business to business ecommerce for Forest Industry Trading Partners



- Real time load tracking
- Company and remote deliveries
- User defined view reports and downloads

- Mill, Yard and Sort inventory mgmt.
- Consumption & adjustments
- Charts
- Pivot tables & charts

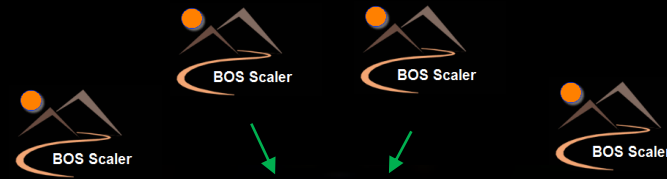
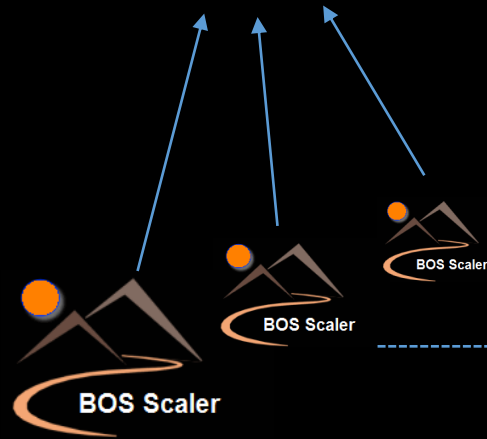
- Full function grids and user defined layouts
- Next generation web-based BI capabilities

- Geospatial maps
- Forecast to Actual tracking analysis
- Extensible for additional layers

- Export all loads across region for Settlement in BOS Supply

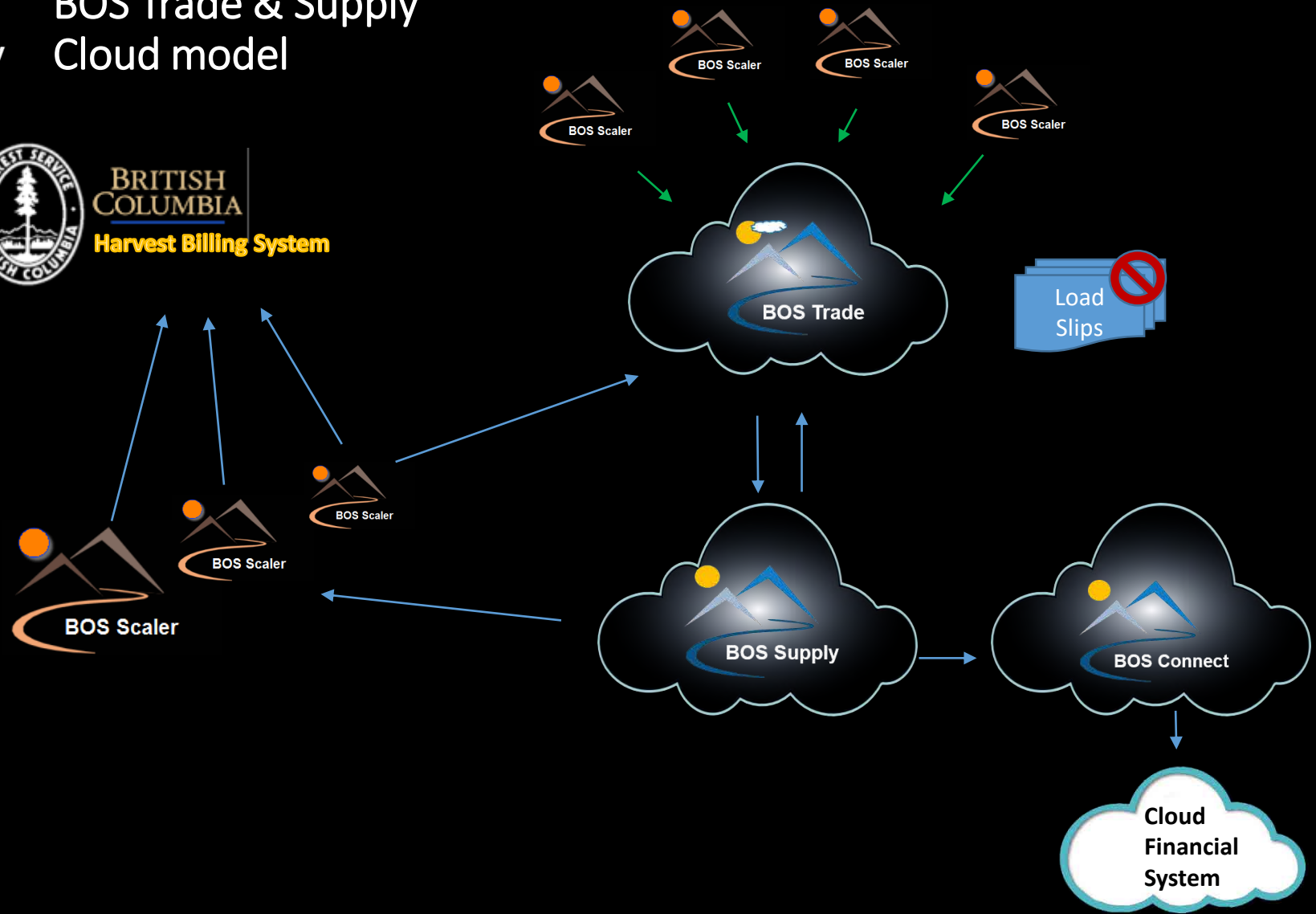


BOS Trade
enabled model





BOS Trade & Supply Cloud model





Woodflow Logistics Support





BOS Trade demo



Load Sample Piece Scaling

Piece Log Scaling

BOS Scaler - Interfor Corporation [ADMIN]

File Main Setup

Switchboard Reports Arrival Weigh In Departure Weigh In Weigh Out Sample and Red Tag Find Weigh Scalings Piece Scalings Non-Forestry Scalings Section Test Batch Accounting Batch HBS Import HBS BOS Trade Inventory Help Logout & Exit

Main Weigh Scalings Batches Synchroniz Inventory Help Exit

Piece Scalings

Piece Scalings Period: 2016 - March Show Highest Versions: Close

Status: <All> From: 01/Mar/2016 to: 31/Mar/2016 Search: X ReQuery

	Date	Scaler	Return	Mill	Load	TM	Block	Ticket	Name	ET	V
▶	30Mar16 12:02	LYNN	238	1	653	FB1254	-	730801	ATCOWOO	SS	1
▶	29Mar16 7:18	NATHASHA	20	1	642	DRM519	-	730790	NORTEND	CS	1
▶	28Mar16 13:01	NATHASHA	19	1	630	92786	-	730778	ROCKPIN	CS	1
▶	24Mar16 11:55	NATHASHA	18	1	613	DRM519	-	730761	NORTEND	CS	1
▶	23Mar16 15:33	NATHASHA	17	1	604	92786	-	730752	ROCKPIN	CS	1
▶	23Mar16 12:47	NATHASHA	558	1	598	EZ9452	452-03	730746	PDLOGGI	SS	1
▶	23Mar16 7:06	NATHASHA	16	1	585	DRM519	-	730733	NORTEND	CS	1
▶	21Mar16 6:55	LYNN	24	1	538	92786	-	730686	ROCKPIN	CS	1
▶	18Mar16 11:24	JANNE	10	1	530	EZ9452	452-03	730678	PDLOGGI	CS	1
▶	18Mar16 11:19	JANNE	9	1	526	FB1254	12	730674	ATCOWOO	CS	1
▶	18Mar16 11:03	JANNE	8	1	508	DRM519	-	730656	NORTEND	CS	1
▶	18Mar16 10:54	JANNE	7	1	501	FX7053	LG003	730649	VAAGFIB	CS	1
▶	18Mar16 8:14	JANNE	6	1	496	EZ9436	436-01	730646	5132BCL	CS	1
▶	17Mar16 16:52	JANNE	5	1	481	EZ9452	452-03	730629	PDLOGGI	CS	1
▶	17Mar16 16:46	JANNE	4	1	477	DRM519	-	730625	NORTEND	CS	1
▶	17Mar16 11:43	JANNE	2346	1	464	59002	VA S051	730612	WEYFCOM	SS	1

Record: 14 1 of 30 Filtered Search

Piece Scalings

Period: 2016 - March Show Highest Versions: Close

Status: <All> From: 01/Mar/2016 to: 31/Mar/2016 Search: X ReQuery

New Tally Date Scaler Return Mill Load TM Block Ticket Name ET V

Query / Edit Flag Delete Print Find Piece Scale Batch HBS Reports

Piece Scale Edit

DDN: CS04S25330382 Version: 1 Print after Save: Save Cancel

Tally Date: 30/Mar/2016 12:02 Arrival Date: 29/Mar/2016 9:05

Primary Scaler: LYNN Mill: 1

Scaler Return #: 238 Load #: 653

Event Type: SS Timber Mark: FB1254

Scale Ticket #: 730801 Block:

Load Arrival #: 653 Stratum: 01

Secondary Scaler: Net Weight: 36,790

Infraction Specification: LQ2016 Sample Weight: 36,790

Length Specification: 20141111 Lengths in cm:

Length Waste Method: Average Conversion Method: Gross ReCompute

Conversion Method: Gross Comment:

		Load Summary		Piece Summary	
		Actual	Computed	Actual	Computed
Gross Volume:	40.880	40.880	40.880	Defect Volume:	0.029
Off Length Volume:	0.833	0.833	0.833	Net Volume:	40.880
Net Volume:	40.880	40.880	40.880	Infraction Volume:	40.880
Infraction Volume:	40.880	40.880	40.880	Acceptable Fibre:	40.018
Acceptable Fibre:	40.018	40.880	40.880	Conversion:	1.11117
Conversion:	1.11117	1.11117	1.11117	% Weighted:	100.00%
% Weighted:	100.00%			% Acceptable Fibre:	97.89%
% Acceptable Fibre:	97.89%	100.00%	100.00%		

Actual Tally		Computed Tally																
Piece	Spec.	Grd	Acctg	Top	Butt	Len	Gross	Defect	Off Len	I1	I2	I3	I4	Weight	Infraction	AF	P/S	Pcs
1	FI	2		6	8	360	0.057	0.000	0.007	LE				0.00		0.050	S	
2	FI	2		8	10	500	0.129	0.000	0.000					0.00		0.129	P	
3	FI	2		10	12	505	0.192	0.000	0.003	LE				0.00		0.189	P	
4	LA	2		9	11	620	0.197	0.000	0.000					0.00		0.197	P	
5	LA	2		5	9	552	0.092	0.000	0.008	LE				0.00		0.084	P	
Pieces:		287	P: 211 S: 73 O: 3				40.880	0.029	0.833					0.00	0.000	40.018		

Accounting Batch: HBS Batch: Clear Details Actual Send to Handheld Get from Handheld

Log Details

The screenshot displays a software interface for managing piece scalings. It consists of several overlapping windows:

- Piece Scalings (Main Window):** Shows a list of scalings with columns for Date, Scaler, Return, Mill, Load, TM, Block, Ticket, Name, and ET. The current filter is 'All' and the period is '2016 - March'.
- Piece Scale Edit (Edit Window):** Displays details for a specific scaling (DDN: CS04525330382, Version: 1). It includes fields for Tally Date (30/Mar/2016 12:02), Arrival Date (29/Mar/2016 9:05), Primary Scaler (LYNN), and Mill (1). It also has 'Save' and 'Cancel' buttons.
- Piece Detail (Detail Window):** Provides a comprehensive view of a single piece (Piece No: 1). It includes:
 - General Info:** Piece No: 1, Specie Code: 5, Grade Code: 2, EUS/Acctg Grade: 1, Top: 6, Butt: 8, Length: 360, Off Length Length: 45.
 - Volume and Defect Data:** Gross Volume: 0.057, Defect Volume: 0.000, Net Volume: 0.057, Off Length Volume: 0.007, Resultant Volume: 0.050, Infraction Volume: 0.000, Unacceptable Volume: 0.007, Acceptable Fibre Volume: 0.050, Acceptable Fibre %: 87.72%, Weighted Infractions: 0.000.
 - Buttons:** Butt Log Flag (checked), Mark Not Visible (unchecked), and a 'Recompute' button.
- Summary Tables (Right Side):**

	Actual	Computed
Volume:	40.880	40.880
Volume:	0.029	0.029
Volume:	0.833	0.833
Volume:	40.880	40.880
Volume:	40.880	40.880
le Fibre:	40.018	40.880
ersion:	1.11117	1.11117
ighted:	100.00%	
le Fibre:	97.69%	100.00%

Weight	Infraction	AF	P/S	Pcs
0.00		0.050	S	
0.00		0.129	P	
0.00		0.169	P	
0.00		0.197	P	
0.00		0.084	P	
0.00	0.000	40.018		

Quality Source Data

Piece Detail

Close

Detail Defects Infractions

Piece No:	1	Gross Volume:	0.057
Specie Code:	1	Defect Volume:	0.000
Grade Code:	2	Net Volume:	0.057
EUS/Acctg Grade:		Off Length Volume:	0.007
Top:	6	Resultant Volume:	0.050
Butt:	8	Infraction Volume:	0.013
Length:	360	Unacceptable Volume:	0.020
Off Length Length:	45	Acceptable Fibre Volume:	0.038
		Acceptable Fibre %:	65.79%
		Weighted Infractions:	0.000
Butt Log Flag:	<input checked="" type="checkbox"/>		
Mark Not Visible:	<input type="checkbox"/>		
Note:			

Recompute

Log Length Specifications

Log Length Specification Details

Log Length Specification Details Print Preview Save
Print Cancel

Specification Details:

Specification ID: 20141111 Created By: ADMIN
 Name: June 1st, 2014 Created Date: 11/Nov/2014
 Effective Date: 11/Nov/2014 Active:
 Lengths in cm:

Species Length Details Copy Lengths to All Species

Species: BA All Lengths are in Centimetres Copy Lengths Paste Lengths

Length	- Var	+ Var	Min	Type	Len 1	Len 2	Len 3	Len 4	Len 5	Note
315	10' 4.0"	5 10' 2.0"	5 10' 6.0"	Secondary						
376	12' 4.0"	5 12' 2.1"	5 12' 6.0"	Primary						
437	14' 4.0"	5 14' 2.1"	5 14' 6.0"	Secondary						
498	16' 4.1"	5 16' 2.1"	5 16' 6.0"	Primary						
559	18' 4.1"	5 18' 2.1"	5 18' 6.0"	Secondary						
620	20' 4.1"	5 20' 2.1"	5 20' 6.1"	Primary						
752	24' 8.1"	8 24' 4.9"	8 24' 11.2"	Secondary						
874	28' 8.1"	8 28' 4.9"	8 28' 11.2"	Primary						
935	30' 8.1"	8 30' 5.0"	8 30' 11.3"	Secondary						
996	32' 8.1"	8 32' 5.0"	8 32' 11.3"	Primary						
1,057	34' 8.1"	8 34' 5.0"	8 34' 11.3"	Secondary						
1,117	36' 7.8"	8 36' 4.6"	8 36' 10.9"	Primary						

Record: 1 of 21 Search

Log Infracation Specifications

The screenshot displays the BOS Scaler software interface. The main window is titled "Log Infracation Specifications" and shows a list of specifications. A secondary window, "Log Infracation Specification Details", is open, displaying the details for specification LQ2016. The details include the specification ID, name, effective date, and a table of specifications.

Log Infracation Specification Details

Specification ID: LQ2016
Name: April 2016 Quality Specifications
Effective Date: 01/Aug/2015
Created By: ADMIN
Created Date: 12/Mar/2016
Active:

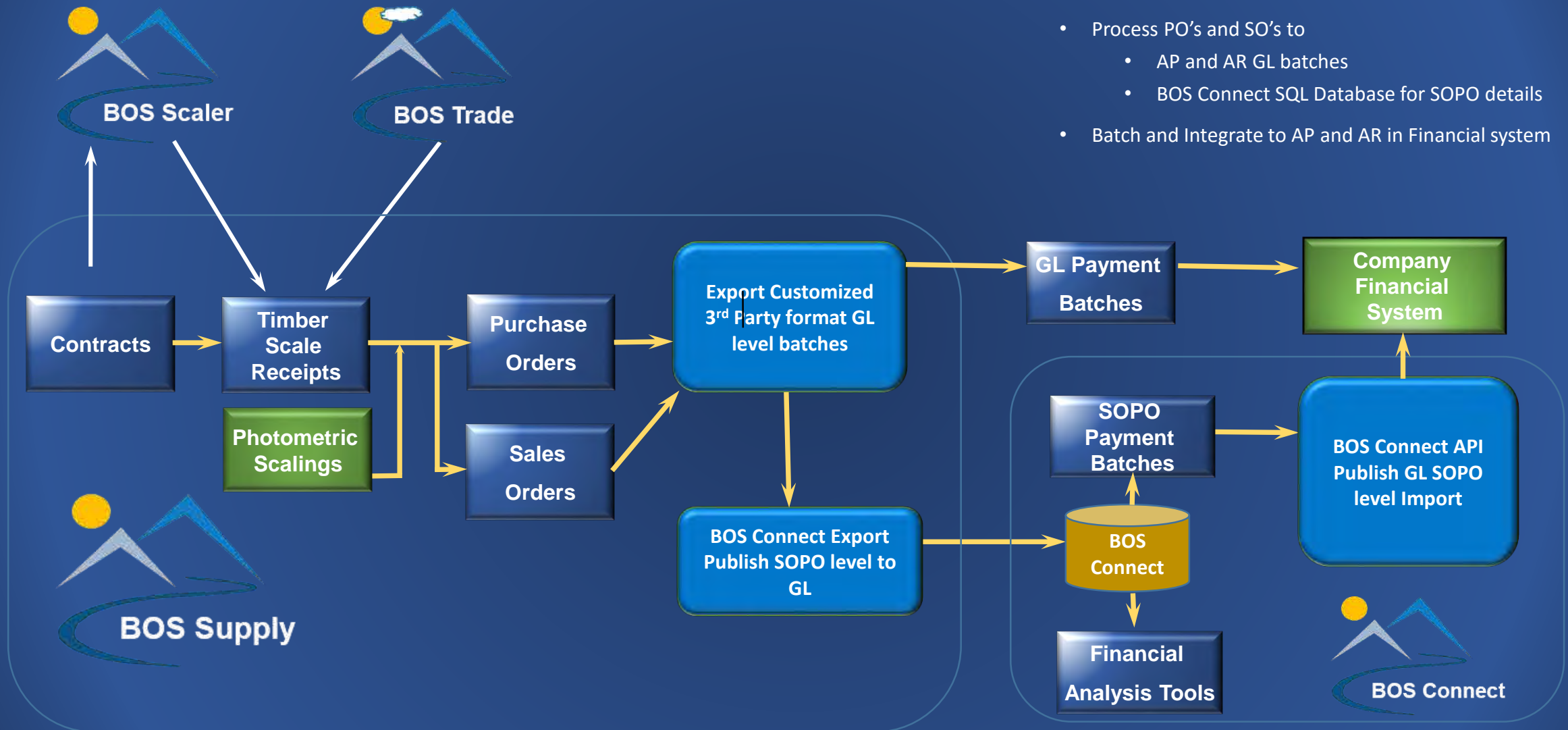
Code	Description	LPW	TBW	Diam	Small %	Large %	Whole %	Weight
EB	End Damage - Butt	L	B					X
ET	End Damage - Top	L	T					X
FB	Flared Butt	L	B					X
ST	Small Top	L	T					X
BF	Burnt Fibre	P	W				25	X
CF	Cat Face	P	B	6	50	25		X
CR	Crook	P	B	6	50	25		X
CU	Cull Log	P	W				100	X
FT	Forked Top	P	W				25	X
LE	Off Length	P	W					X
LK	Large Knots	P	W				25	X
LL	Long Logs	P	W				100	X
MD	Machine Damage	P	B	6	50	25		X
OF	Off Species	P	W				25	X

Record: 14 of 23 | No Filter | Search



Financial Measurement

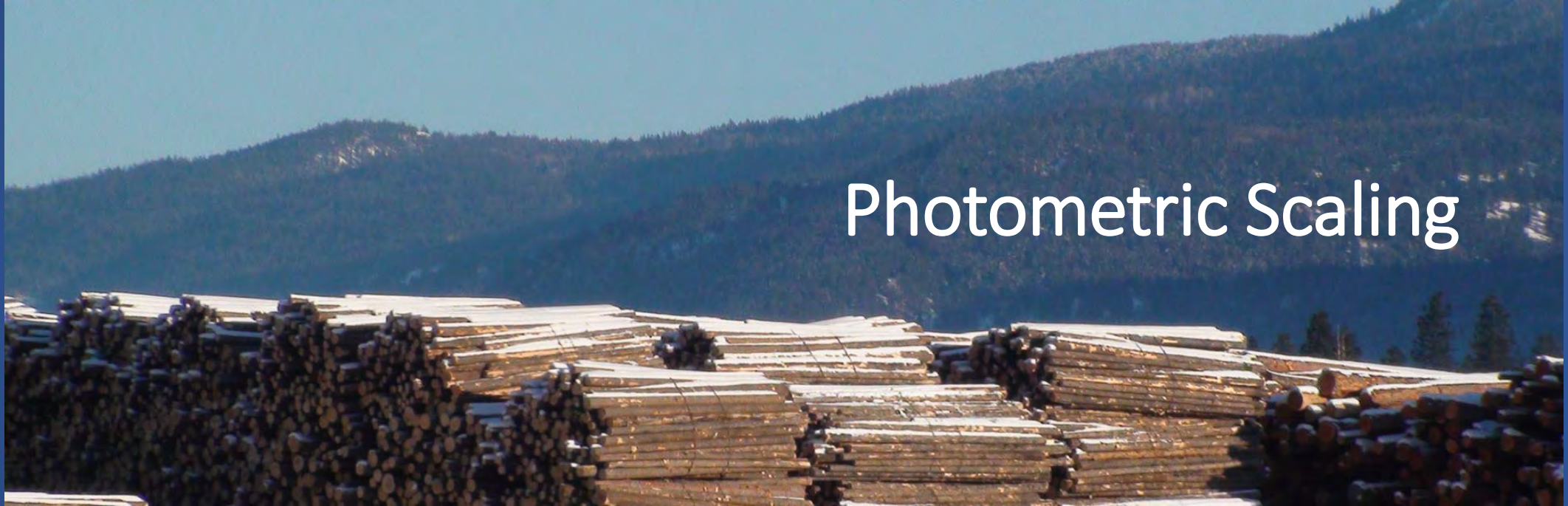
Financial Processing



- Collect and process settlement transactions for Period
 - Receipts – Import from BOS Trade and BOS Scaler
 - Process Receipts to PO's and SO's
 - Make Adjustments
- Process PO's and SO's to
 - AP and AR GL batches
 - BOS Connect SQL Database for SOPO details
- Batch and Integrate to AP and AR in Financial system



Photometric Scaling



Photometric Measurements Usage

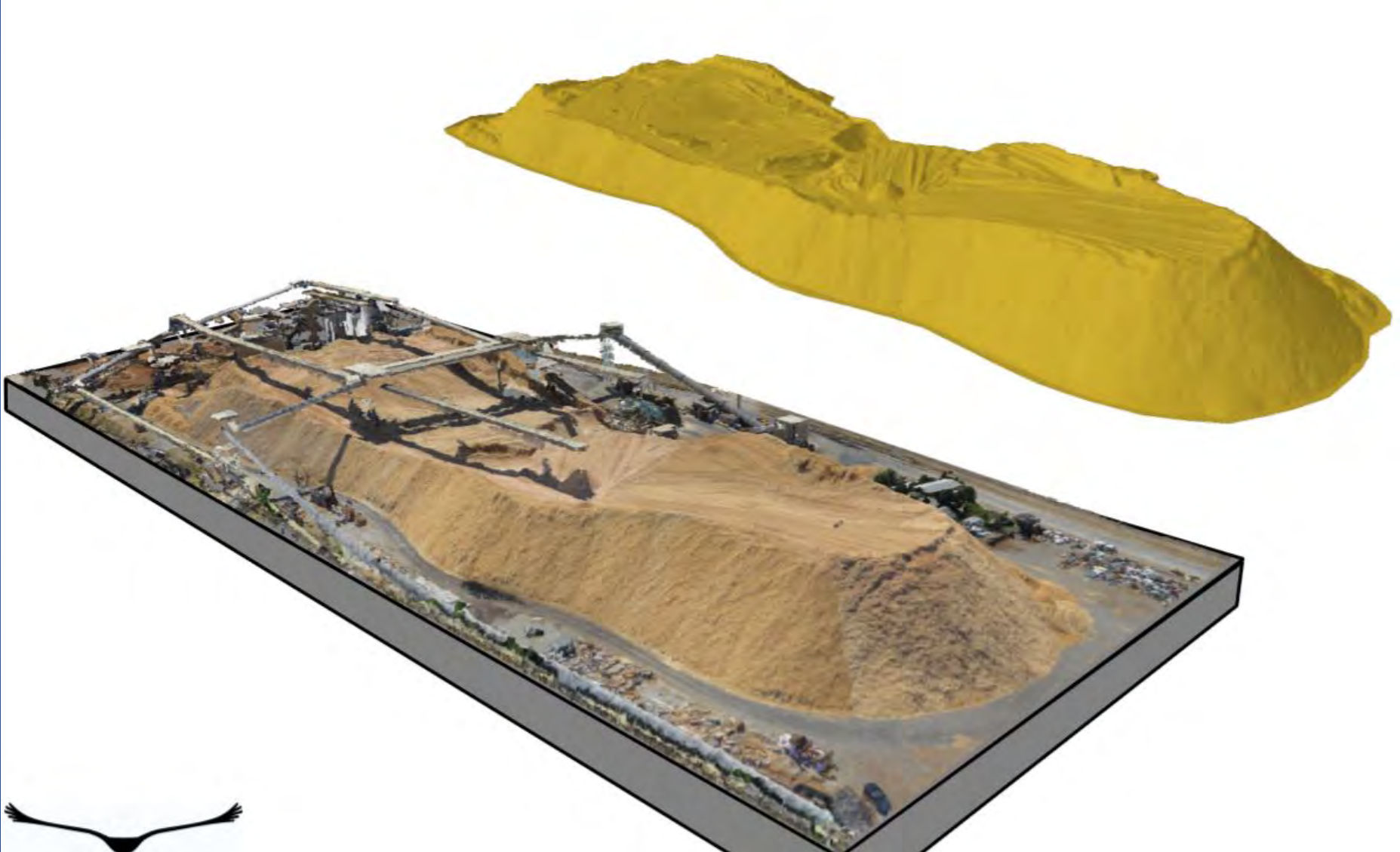
- Planned usage for within BOS Forestry apps
- Woodpiles
 - Source data for processing Contract progress payments
 - Capturing diameter classes for quality program
 - Providing summary inventory and diameter class data for use by mill
- Trucks
 - Logging truck load added detail
 - Log count
 - Diameter classes
- Evaluation project in play with large Canadian company
- Vendor participants
 - Timbeter/Logsize
 - FOVEA
 - Trestima

Nelson based Harrier Ariel Surveys

Harrier Aerial Surveys is a fully licenced commercial unmanned aerial vehicle (UAV) remote sensing service provider. With our expertise in high precision surveying, GIS and remote sensing we offer accurate aerial imagery, digital elevation models and 3D measurements and calculations. Easily mobilized, data capture is performed quickly, accurately and at close proximity to the target. All the while, keeping operators and personnel out of harm's way.



Celgar Pulp Mill





Photometric Scaling POC



Photometric App Evaluation

- Run test piles through capture process
- Upload to BOS Trade dedicated SQL Server tables
- View analyze in grids and charts
- Compile results for Tembec study
- Offer photometric data services as part of BOS Forestry solutions based on Customer app choices

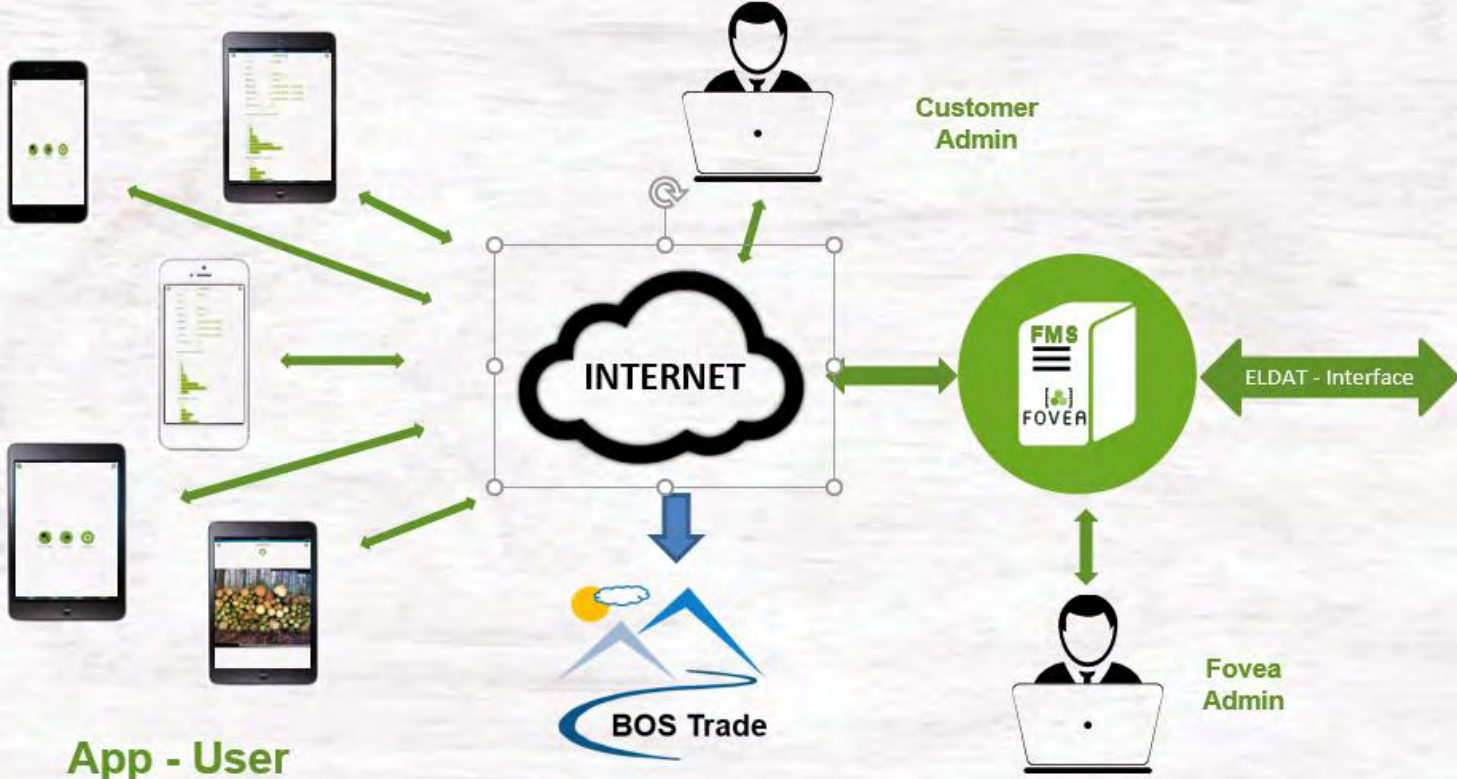
Timbeter



Log stack measurement & digitalization

FOVEA

FOVEA Forest Management System (FMS)



Gager brandes (brandes@fovea.eu)

Plots

Plot 11666

Fineness C
 Tree species BU
 Total woodpiles 1
 Total logs 122 (+4)
 Total m³ gross 77.22 m³
 Total scm FOVEA 52.67 m³ incl. underl.
 Total scm RVR 46.33 m³ excl. underl.



Fellings

Felling 2
 Total woodpiles 1

Total m³ gross 77.22 m³
 Total scm FOVEA 52.67 m³ incl. underl.

Measure date	08.03.2015	Coordinates	50.573990, 8.788686
Gager	brandes brandes@fovea.eu	Forest side	-
Tree species	BU	Measurement method	photo-optical
Fineness	IN to B	Note	-
m³ gross	204.21 m³	Quantity underlays	4
m³ net	196.46 m³ (Fac. 0.962)	Avg. height front	1.48 m
sem RVR	122.53 m³ (Fac. 0.600)	Front face	34.04 m²
Log length	8.00 m	Avg. height back	-
Woodpile width	28.00 m	Back face	-
Felling no.	2	Begin	03.03.2015
Forestry/District	Kirchzell/Odenwald	End	01.06.2015
Lumberjack	No contractor	Note	-
Skidder	Hess GmbH		
Plot no.	11223344	Fineness	IN to B
Date	08.03.2015	Sort	-
Note	Industrieholz	W/o bark	No
		Color marking	-
Wood buyer	einkäufer	Street address	-
		Town	-

Individual Log and Pile Volume scenarios



Dedicated tables in BOS Trade for XML uploads

FOVEA XML Export Field Types

Field Name	Type	Description
Polter_ID	unsigned INT	UID of a woodpile
Woodpile_no	VARCHAR(100)	Number of the woodpile
User_mail_address	VARCHAR(100)	Mail address of the user that created the woodpile
Plot_no	VARCHAR(100)	Number of the plot (a plot contains information about the fineness, sort and length of the wood - specified by the wood buyer → German wood industry)
Felling_no	VARCHAR(100)	Number of the felling (a felling contains information about the timespan and the forest site where the wood is cut and by which contractor → German wood industry)
Department	VARCHAR(100)	Location in the forest (→ German wood industry)
Sub_department	VARCHAR(100)	Location in the forest (→ German wood industry)
Sub_area	VARCHAR(100)	Location in the forest (→ German wood industry)
Woodpile_note	VARCHAR(1000)	Comment on the woodpile
Tree_species	VARCHAR(10)	Tree species
Log_length	unsigned DECIMAL(15,2)	Depth of the woodpile
Woodpile_width	unsigned DECIMAL(15,2)	Width of the woodpile
Fineness	VARCHAR(10)	Describes the quality of the wood (upper limit)

Merging bush Woodpiles with Scale data for Progress Payments

	A	B C	D	E
1	BOS Trade Data Mapping			
2		Ma	BOS TRADE	
3	<?xml version="1.0" encoding="UTF-8" standalone="yes"?>	e t	DDN	580147054H18I
4	<FoveaExport>		Version	1
5	<Woodpile id_polter="2536">		Site	587
6	<Polter_ID>2536</Polter_ID>		Scale Name	Jemi Fibre Corp. - Edgewater
7	<Woodpile_no.>1234</Woodpile_no.>	Wo	Ticket	15418
8	<User_mail_address>brandes@fovea.eu</User_mail_address>		Date In	01/Dec/2015 y
9	<User_mail_address.>1</Plot_no.>		Date/Time In	01/Dec/2015 15:12 y
10	<Felling_no.>100</Felling_no.>		Type	ARR
11	<Department></Department>		LDS Out	
12	<Sub_department></Sub_department>		Time In	15:12:00
13	<Sub_area></Sub_area>		Timber Mark	EDXTT y
14	<Woodpile_note></Woodpile_note>		Carrier	Bond Ventures
15	<Tree_species>BU</Tree_species>		Supplier	Bond Ventures
16	<Log_length>4,00</Log_length>		Truck ID	K249A
17	<Woodpile_width>12,00</Woodpile_width>		Block	LER0015 y
18	<Fineness>A</Fineness>		Time Out	15:44:11
19	<Fineness_to>B</Fineness_to>		Gross Entered	0 y
20	<Sort></Sort>		Cycle Time	
21	<Wo_bark>No</Wo_bark>		Loop Min.	32
22	<Color_marking></Color_marking>		Carrier ID	BOND VENTURES
23	<cbm>65,94</cbm>		Tare Entered	0
24	<cbm_net>65,94</cbm_net>		Transit Time	
25	<Correction_factor_cbm_gross_to_cbm_net>1,000</Correction_factor_cb		Tare (KG)	20,500
26	<gross_cbm_gross_to_cbm_net>1,000</gross_cbm_gross_to_cbm_net>		Gross (KG)	59,530

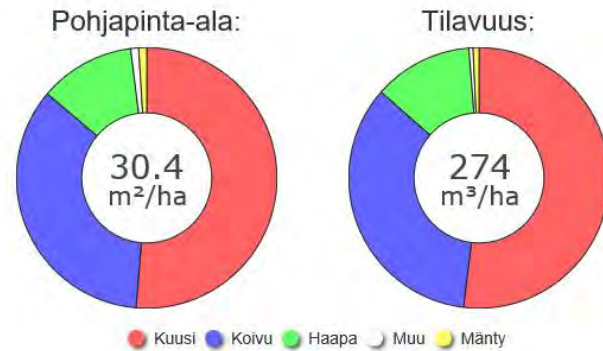


Finland



Kuvio: 17

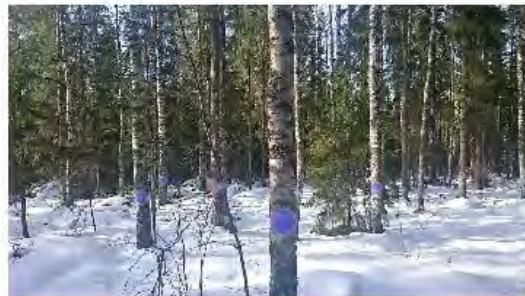
Tila: Solkivuori
Pinta-ala: 0.83 Ha
Mittaus suoritettu: 15.03.2016



Puustotiedot

Laji	Ppa (m ² /ha)	Runkoja (kpl/ha)	Pituus (m)	Läpimitta (cm)	Ikä (v)	Tukki-%	Tilavuus (m ³ /ha)
Kuusi	15.6	435	19.5	21.4	70	57	142
Koivu	10.6	336	19.8	20.1	65	31	95
Haapa	3.6	87	20.9	22.9	63	38	34
Muu	0.3	38	9.0	10.0	28	-	1
Mänty	0.3	11	15.5	17.5	43	34	2
Yhteensä	30.4	907	19.3	20.5	65	45	274

Keskivirhe: 9.4%



Photometric POC Results available in June 2016

- Share study results
- Update on integrations with BOS Forestry
- Update on emerging mobile apps
- Email us if interested in study results
- info@BOSForestry.com



Opportunities

BOS Trade Opportunities

- Washington and Idaho Region
 - Testing BOS Trade in the US
 - Cross border log shipping
 - Looking for companies that are interested in testing cubic meter based supply chain system
- International
 - Looking for companies and channel partners that are interested in testing BOS Trade and related supply chain applications.