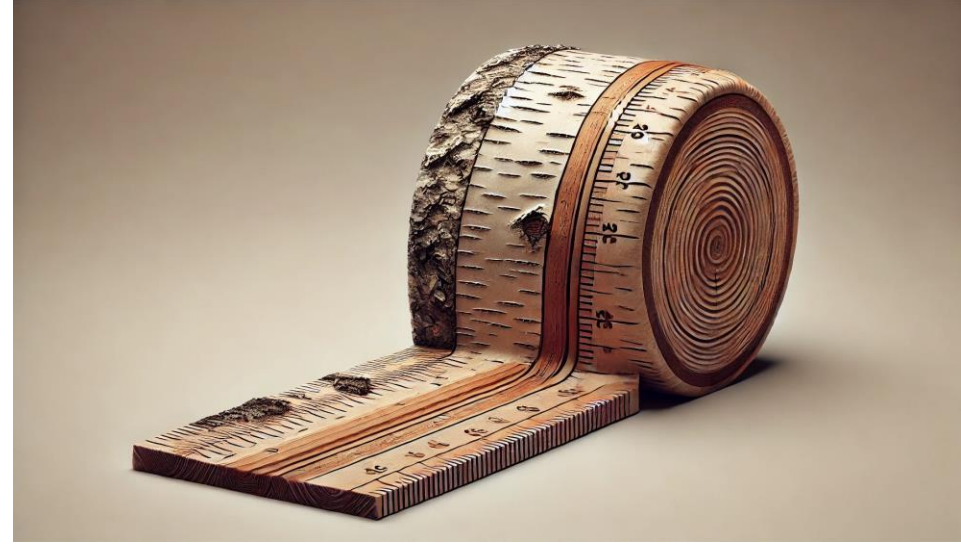


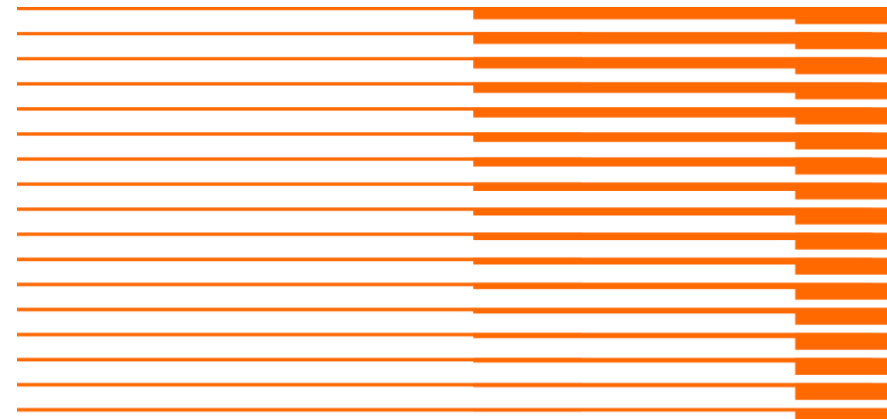


The Importance of Accurate Veneer Log Measurement and Evaluation

Director of Birch Timber
Procurement Department

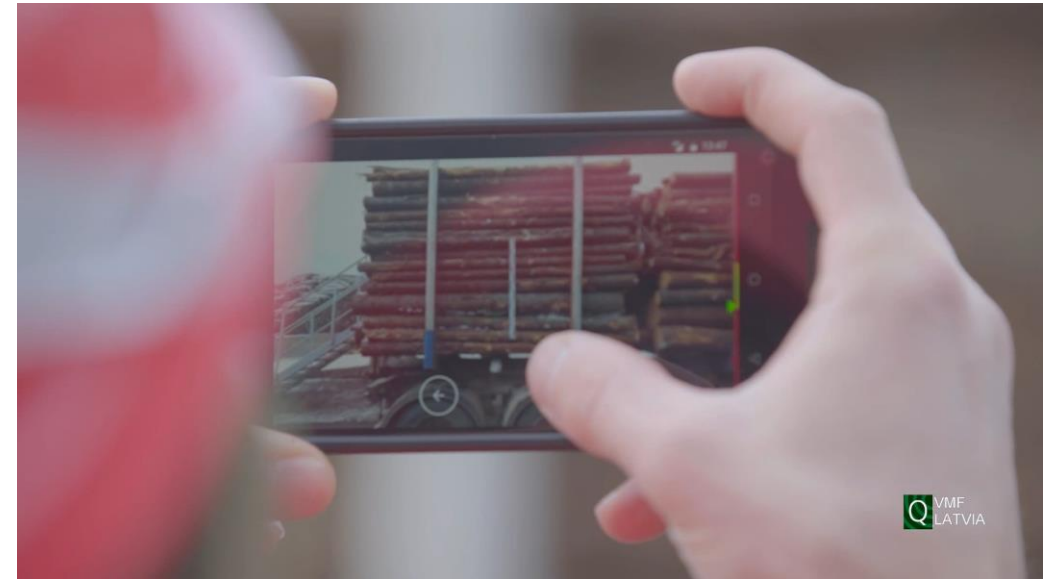
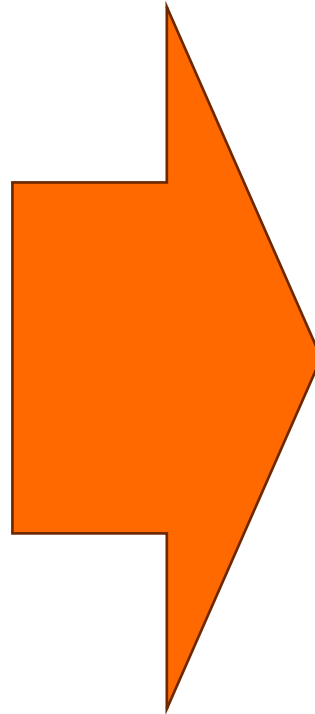
Artis Podnieks

■ 19.03.2025.





Log measurement evolution in Latvijas Finieris





Early Days: Internal Measurement – How veneer log measurement was conducted in the late 1990s.

- Subjectivity and Potential Bias:** Even with clear guidelines, human assessment introduced the risk of inconsistencies.
- Supplier Trust Issues:** Log suppliers occasionally questioned the fairness of evaluations, leading to disputes over pricing and log quality.
- Operational Efficiency Challenges:** Internal measurement required significant resources and time, impacting the overall supply chain efficiency.





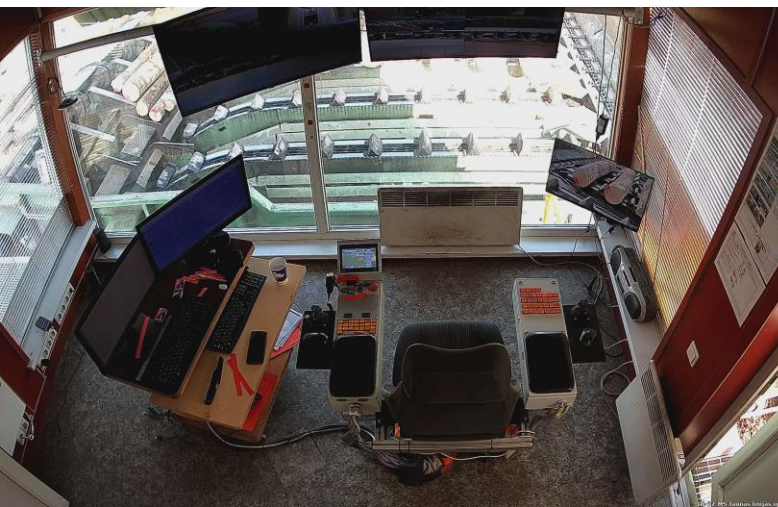
Initial Measurement Methods – Geometric method, applied coefficients, and the establishment of a Latvian measurement standard.





Industry was quickly shifting to more precise and effective measurement systems – automated sorting lines with 3D scanners

- Latvijas Finieris introduced first sorting line in Y2003 for birch veneer log measurement and sorting using LIMAB 3d scanner and measurement system.
- Sorting lines step by step were introduced in all production site timber-yards. (7 sorting lines today).
- Precise log measurement giving opportunity to create more fair payment system towards log suppliers, better competition tool.
- Efficient sorting of trees upon request from factories.



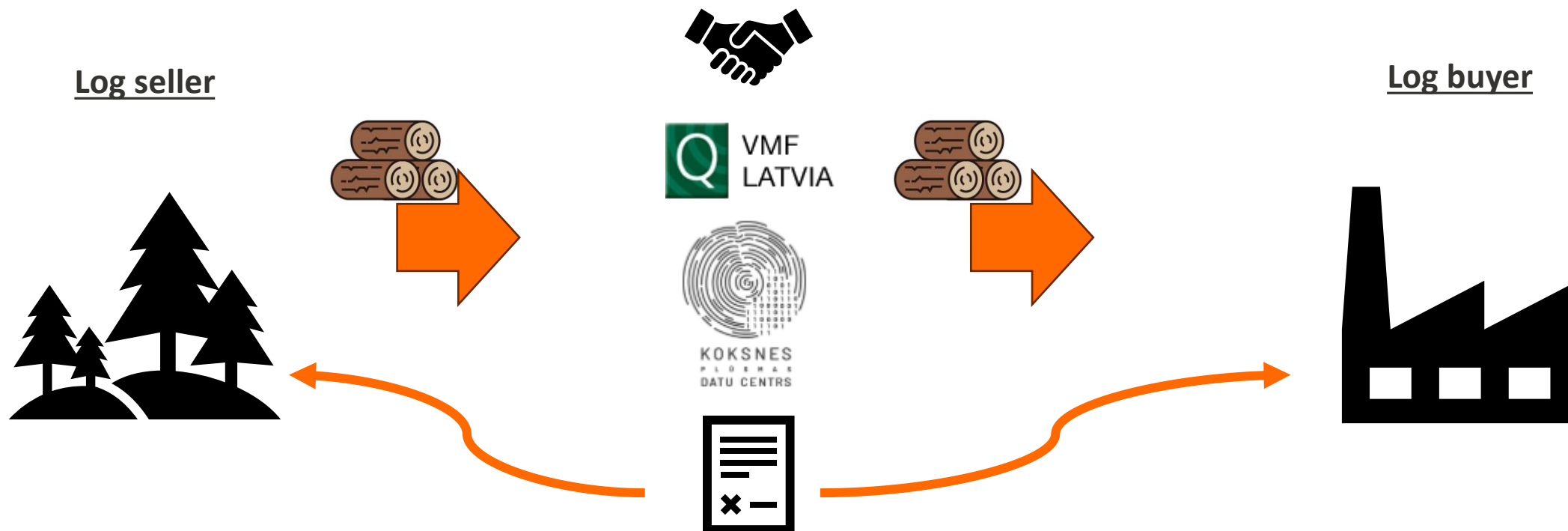


Industry Transformation – How AS Latvijas Valsts Meži roundwood sales procedures influenced the need for independent measurement.

6-7 million m3 annually on sale as roundwood assortments from State forests, ~ same amount from private sector.

Transparent log measurement and quality evaluation done by 3rd party professionals.

Log flow Data system provides information from loading of log cargo to measurement information for both sides involved in deal.





Technological Advancements – Introduction of automatic sorting lines and their impact on precision and efficiency.

- With independent measurement, the precision control became much more important in improving quality of measurements for whole industry
- Buyers and Sellers agree on measurement accuracy goals and entrust control and management to an independent institution, in our case VMF Latvia
- Regular reporting of results ensures confidence in the quality of measurements between buyers and sellers

Apaļo kokmateriālu individuālā uzmērīšana ar automātisko uzmērīšanas ierīci

Periods: 2024 Augusts - 2025 Janvāris

Suga	Parametrs	Ģenerālķopu skaits***	Kopējais tilpums				Ģenerālķopu skaits***	Kvalitatīvais tilpums										Kontrolsortimentu skaita izpildes starpība, %							
			LVS 82:2024			1 m kontrolsortimentu skaita izpildes starpība, %		LVS 82:2024		Relatīvās vērtības sistemātiskā novirze	Sakritība														
			Sistemātiskā novirze	Standart-novirze	Sakritība			Caurmēra redukcijas	Garuma redukcijas		Mizas														
					Kvalitātes klase						Sugas														
Priede	Precizitāte*, %	17 (0)	0.2	↓	3.6	-	12%	16 (2)	90%	↑	93%	-	100%	-	3.3	↓	99%	-	99%	-	93%	↑	-	-	2%
	Pārstrādes vietu skaits, kuras atrodas ārpus noteiktajiem mērķiem		-	0	-	0	1		0	2	0	0	1	-	-										
	Kļūdainie dati, %		0.0	-	-	-	0		0	1	1	1	2	0	-	-									
Egle	Precizitāte*, %	16 (0)	0.8	↑	3.6	↑	9%	15 (2)	95%	↑	94%	↓	100%	-	2.7	↓	100%	-	99%	-	99%	0	98%	-	30%
	Pārstrādes vietu skaits, kuras atrodas ārpus noteiktajiem mērķiem		-	1	-	0	0		0	0	0	0	0	0	0										
	Kļūdainie dati, %		0.0	-	-	-	0		0	1	1	0	0	0	0										
Bērzs	Precizitāte*, %	6 (0)	0.9	↓	4.1	↑	11%	6 (0)	80%	↓	-	-	100%	-	0.7	↓	95%	-	-	-	95%	-	-	-	46%
	Pārstrādes vietu skaits, kuras atrodas ārpus noteiktajiem mērķiem		-	0	-	1	-		0	0	0	-	0	0	-										
	Kļūdainie dati, %		0.0	-	-	-	0		0	0	0	3	-	0	-	-									
Apse	Precizitāte*, %	3 (0)	2.1	-	6.2	↓	-23%	3 (3)	86%	↑	-	-	99%	-	1.5	↓	99%	-	98%	↑	-	↑	95%	-	-45%
	Pārstrādes vietu skaits, kuras atrodas ārpus noteiktajiem mērķiem		-	1	-	1	-		0	0	0	0	0	-	0										
	Kļūdainie dati, %		1.0	-	-	-	0		-	0	0	0	0	-	0										

*vidējais svērtais no uzmērītā apjoma m³ katrā pārstrādes vietā 6 mēnešu periodā

*** Ģenerālķopu skaits - iekavās norādītas ģenerālķopas, kurām 6 mēnešu periodā nav attiecīgais minimālais skaits

Kopējā tilpuma un vērtības sistemātiskās novirzes attēlotas absolūtos lielumos

Apzīmējumi:

↑ - uzlabojusies, salīdzinot ar iepriekšējo 6 mēn. "rullīša" periodu

↓ - pasliktinājusies, salīdzinot ar iepriekšējo 6 mēn. "rullīša" periodu

Kopējais tilpums		Kvalitatīvais tilpums		Sakritība	
standartnovirze		vērtības	vērtības	Suga	Šķiras un mizas
7,1% ... 7,4%		sistemātiskā	caurmēra un garuma		
		novirze	redukcijas		
		5,1% ... 5,4%	96%		76-79% / 86-89%
		≥7,5%	≥5,5%	≤96%	≤75% / ≤85%



Key Benefits of Independent Measurement – Fairness, trust, efficiency, and compliance.

- **Increased Fairness and Transparency:** A neutral third-party assessment removes subjectivity, ensuring both the supplier and the buyer receive an objective evaluation.
- **Improved Supplier Relationships:** With clear and reliable assessments, trust between suppliers and the company has grown, reducing disputes and fostering long-term partnerships.
- **Enhanced Accuracy and Efficiency:** Independent evaluation methods use modern technology and standardized processes, improving measurement precision and operational speed.
- **Regulatory Compliance and Sustainability:** As the industry faces increasing regulatory scrutiny, independent verification ensures compliance with standards such as the upcoming EU Deforestation Regulation.



Help in EUDR compliance

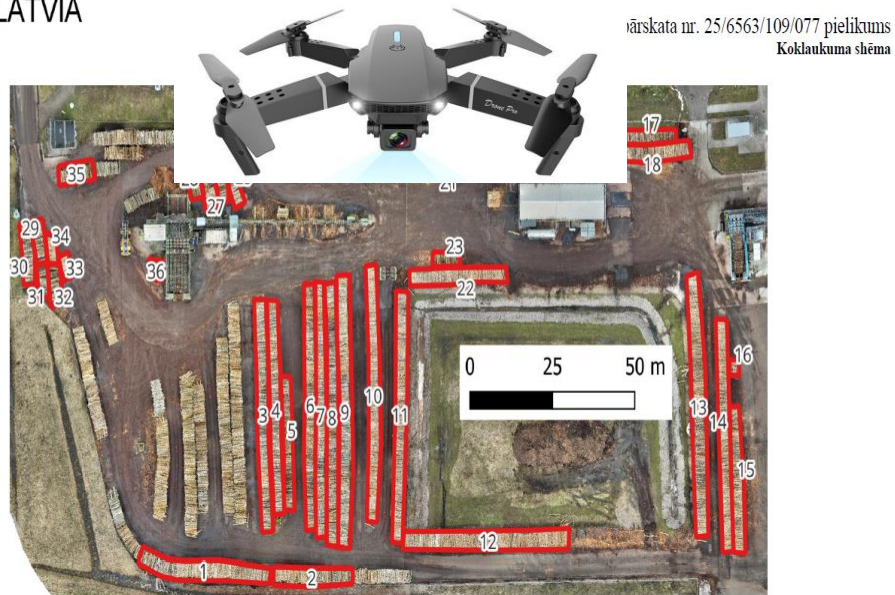
- Trough log flow database which is used today by industry to ensure e-waybill usage and access to measurement data we are ready to pass the EUDR TRACE system reference numbers from roundwood seller to buyer instantly and automatically
- Geolocation data (JSON) is granted by State Forest Service through API connection or manual input already .
- Internal information database has to be created to ensure correct EUDR information transfer to our product buyers.



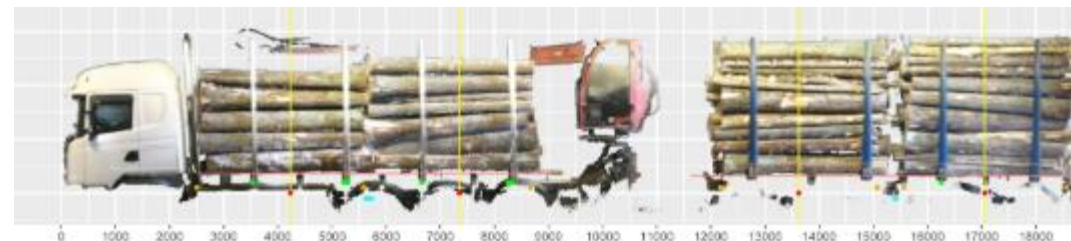


Innovative and Future Innovations in Log measurement and quality evaluation with help of AI.

Q VMF
LATVIA



Drone measurement – already in progress, quick and precise large quantity measurements – log yard inventory.
Future – fully automated, geometry and volume detection.
Same goes for gate scanners – not only high precision but also fully automated measurement data



AI trained log quality evaluation, pilot project already training on LF sorting line.

We hope to have 1st iteration ready for work in 2-3 years.
Easier for estimator, instead of 24/7 eyes on logs, can be 8/5 with continuous training AI system in disputable situations.

Goal is to achieve better precision than average human.



Дякую