



7º CONGRESO FORESTAL ESPAÑOL

Gestión del monte: servicios ambientales y bioeconomía

26 - 30 junio 2017 | Plasencia
Cáceres, Extremadura

“ForestHQ” plataforma online para la planificación, inventario y monitorización en tiempo real de los recursos forestales

Jose Alejandro Poveda Lopez & Aitor Arraiza Santillán

Treemetrics Ltd

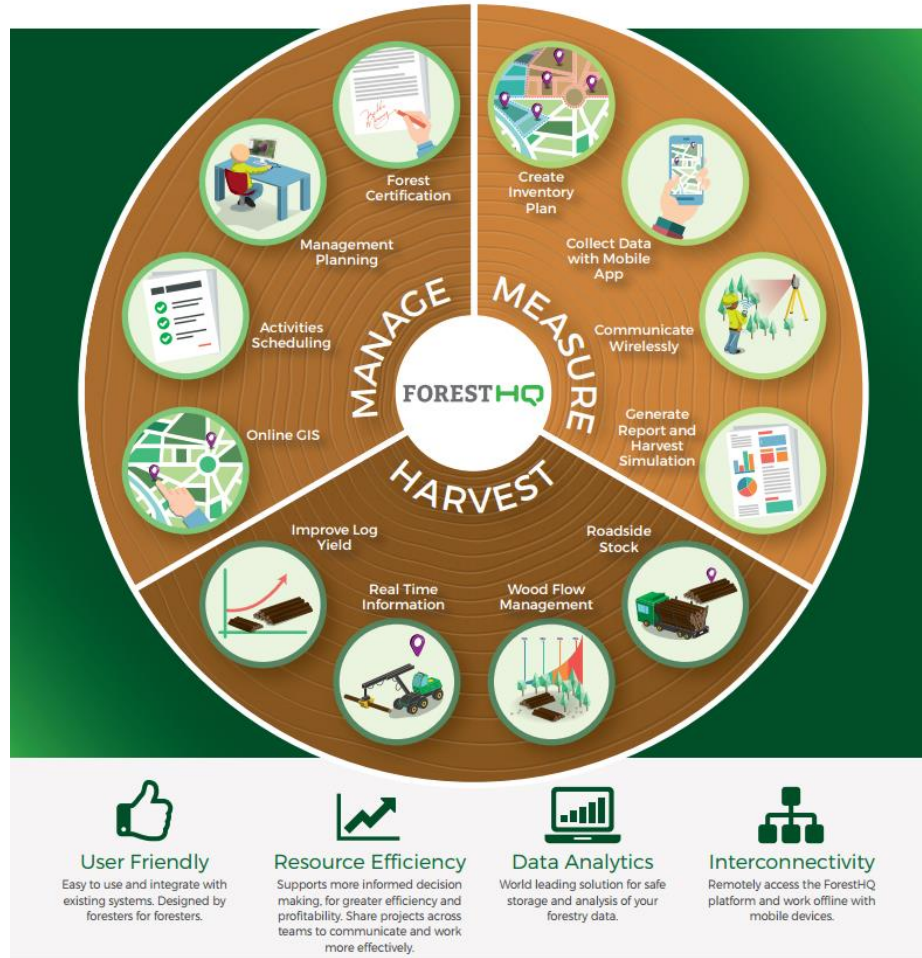
29/06/2017 - 7 CFE Plasencia

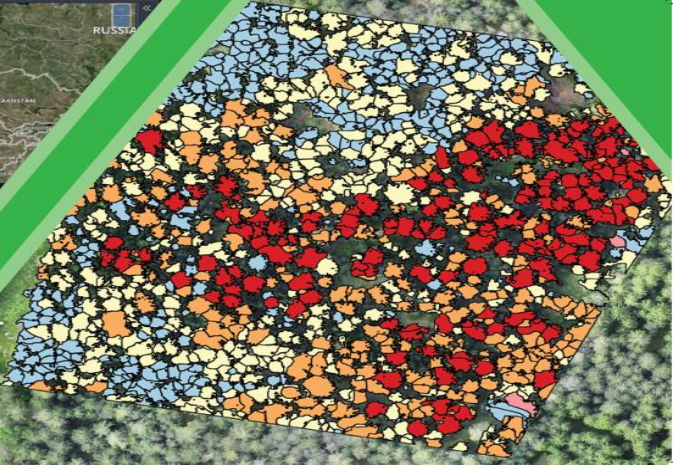
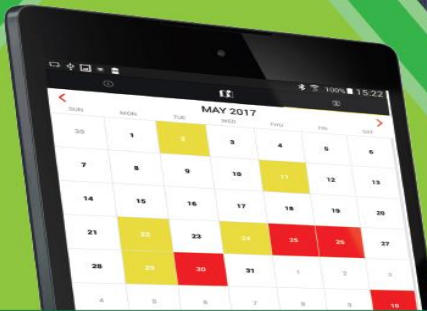
FORESTHQ

A cloud based forest management platform that offers full, realtime, centralised visibility and communications for all essential forestry processes



7º CONGRESO FORESTAL ESPAÑOL





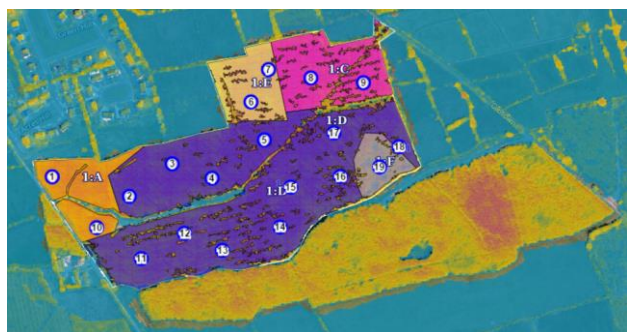
MANAGE



GESTIÓN

1. Plataforma WebGIS

Fácil planificación de inventarios y operaciones forestales



3. Gestión de proyectos & Información Financiera

Gestionar contratistas, facturas y flujo de caja

Name	Status	Contractor	Start Date	End Date	Value	Invoices	Destroy	Forest	Operation	Owner	Files
slab	In Progress	First Contractor	2015-10-08	2016-10-08	5000.00	Invoices	Destroy				Contract Files
isa path	Terminated	First Contractor	2015-10-22	2015-10-22	2000.00	Invoices	Destroy				Contract Files
Build wall	In Progress	second contractor	2015-10-22	2018-10-22	8000.00	Invoices	Destroy				Contract Files
Build road	In Progress	john.meady	2015-11-11	2016-11-11	15000.00	Invoices	Destroy	Mark_example	clearfell_2018		Contract Files
								OK18_34	thinning_2019	Grigorescu Vlad Mihai	Contract Files
								71781		Grigorescu Sorel Mihai	Contract Files
slcs	In Progress	First Contractor	2015-11-20	2016-11-20	7000.00	Invoices	Destroy			Grigorescu Sorel Mihai	Contract Files

2. Planificación Forestal

Planificar Actividades y Operaciones y posibilidad de crear Planes de Ordenación Forestal



This Document has been generated automatically by Forest Assessor™

1. Executive Summary

The results presented in this document are the result of an independent analysis performed by Forest Assessor™. A summary for each forest unit can be viewed in Table 1.

The results are based on the area delineated in the maps shown in Appendix 2. The area covered by forest (productive area) has been estimated on each forest unit. Areas with no tree cover are not considered in the calculations.

The timber volume has been estimated using the Forest Assessor™ cutting simulator. This simulator utilizes the log profiles described in section 4.1. The timber volume has been estimated independently for each species, as shown in Table 1. Timber that did not meet the log specifications has been classified. Volume timber is not included in the marketable volume figures. More details about the inventory results are described in section 6.

Forest Unit	Area (ha)	Productive Area (ha)	Species	Timber Volume (m³)	Marketable Volume (m³)
1	58.00	58.00	ML,ALN,ALF	111388.45	110388.69
Total	58.00	58.00		111388.45	110388.69

A valuation of the standing timber has been carried out, according to the standing log prices defined in section 7. Volume timber is not included in the marketable volume figures. The valuation summary is shown in Table 2 for each species. More details about the inventory results and valuation are described in the sections 4, 5, 6 and 7.

Species	Standing Volume (m³)	Log Yield (m³/ha)	Timber Price (€/m³)	Total Volume (m³)	Total Revenue (€)
ML	1141.7	2.08	50.71	21829	60484.13
ALN	888.28	2.08	50.71	110388	341668.87
ALF	11.06	2.08	50.71	227	6511.84
Total	2740.94	2.08	50.71	110777	1108464.84

Clearfell Report 1 2016-07-26 14:23:47

4. Certificación Forestal

Fácil apoyo a la Certificación Forestal

Document Manager

File Upload

Folder: 31

Drop files here to upload.

Groups: Files (2) | Field Files (0) | Generated Reports (4)

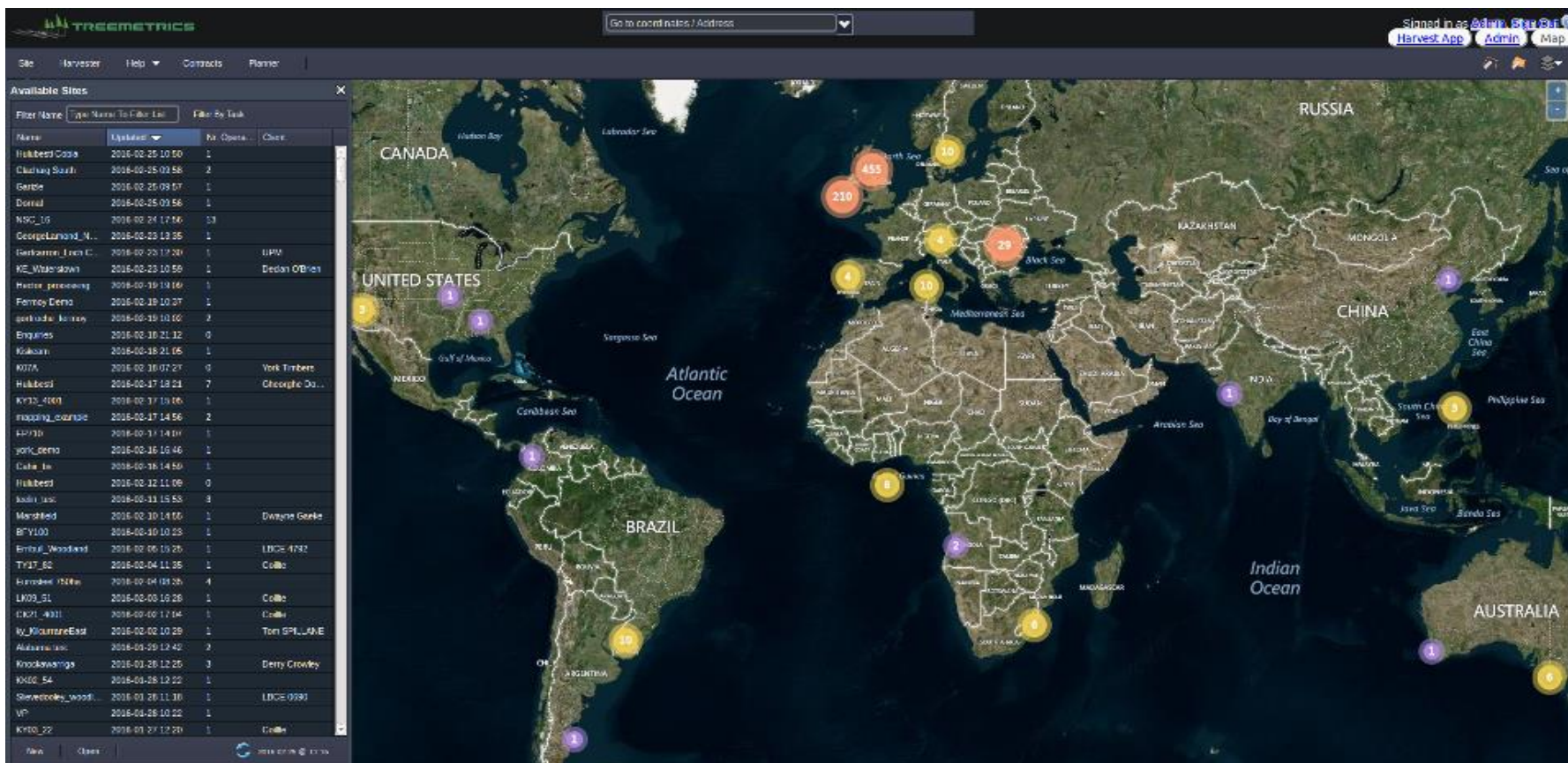
Email selected Files

Folder	File Name	Download	Date	User	Operation	Task	Select	Delete
FSC/Management planning (1/1)								
	FSC_2018.pdf	ctb	2016-Oct-13	Admin	Inventory Demo		✖	📄
FSC/Woodland design, creation, felling and replanting (1/1)								
	Forest_Management_Site04.pdf	ctb	2016-Sep-26	Admin	Balnamoreen (1)		✖	📄



MANAGE

1. Plataforma WebGIS: Fácil planificación de inventarios y operaciones forestales



The screenshot displays the TREEMETRICS WebGIS interface. On the left, a sidebar titled 'Available Sites' contains a table with the following data:

Nombre	Updated	Nr. Operat...	Clasif.
Hulkbeed Coala	2016-02-25 10:50	1	
Chaukay South	2016-02-25 09:58	2	
Genoa	2016-02-25 09:57	1	
Dorval	2016-02-25 09:56	1	
NSC_05	2016-02-24 17:56	33	
George/Lanard_N...	2016-02-23 19:35	1	
Geokarion_Even C...	2016-02-23 17:20	1	UPM
WE_Walshawn	2016-02-23 10:59	1	Dedan O'Brien
Forest processing	2016-02-19 19:16	1	
Farmoy Demo	2016-02-19 10:37	1	
gordada_0000	2016-02-19 10:00	2	
Enquiries	2016-02-16 21:32	0	
Kikako	2016-02-16 21:06	1	
KOZA	2016-02-16 07:27	0	York Timbers
Hulkbeed	2016-02-17 18:21	7	Geographic Da...
KY10_4000	2016-02-17 19:06	1	
mapping_course	2016-02-17 14:56	2	
FP730	2016-02-17 14:01	1	
york_demo	2016-02-16 16:46	1	
Data Im	2016-02-16 14:59	1	
Hulkbeed	2016-02-12 11:09	0	
boon_lac	2016-02-11 15:53	3	
Marshall	2016-02-10 14:00	1	Dwayne Gault
BFY100	2016-02-10 10:25	1	
Embra_Woodland	2016-02-06 15:25	1	LBCE 4982
TY17_82	2016-02-04 11:35	1	Colle
Harrods 1920m	2016-02-04 09:26	4	
LM09_51	2016-02-03 15:28	1	Colle
OK21_4011	2016-02-02 17:04	1	Colle
ly_MourneEast	2016-02-02 10:28	1	Tom SPLANE
Alkama_lac	2016-02-29 12:42	2	
Knockawanga	2016-01-28 12:25	3	Derry Crowley
KH00_54	2016-01-28 12:22	1	
Shreecooley_wood...	2016-01-28 11:30	1	LBCE 0993
VP	2016-01-26 10:22	1	
KH00_22	2016-01-24 12:28	1	Colle

The main map area shows a world map with various colored markers (red, orange, yellow, purple) indicating forest sites across different continents, including North America, Europe, Africa, Asia, and Australia. The interface includes a search bar at the top, navigation controls, and a sidebar with a table of available sites.



2. Planificación Forestal:

Planificar actividades y operaciones y crear tu Plan de Ordenación Forestal

Forest: Ballinameen			
Licences Operations Tasks			
New Operation			
Operations (10 Live)			
Show Archived (2)			
Operation	Type	Status	Start Date End Date
Inventory Demo	Mapping	Closed	28-Apr-2015 25-Feb-2016
thinning_2017	Thinning	New	01-Jan-2017 31-Dec-2017
small_for_test	Roading	New	01-Jan-2016 31-Dec-2016
thinning_2019	Thinning	New	01-Jan-2019 31-Dec-2019
thinning_2005	Thinning	New	01-Jan-2005 31-Dec-2005
	Thinning		17-Aug-

Asignar operaciones a diferentes áreas de su bosque



Planifique sus operaciones y actividades

Informes del Plan Forestal Informes de las Operaciones

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1. Executive Summary

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The timber volume has been estimated using the Forest Assessor™ cutting simulator. This simulator utilizes the log definition described in section 4.1. The timber volume has been estimated independently for each species, as shown in Table 1. Timber that did not meet the log specifications has been classified as Waste timber is not included in the marketable volume figures. More details about the inventory results are described in section 4.

Table 1: Volume Results Summary

Forest Unit	Area (ha)	Prod Area (ha)	Species	Total Volume (m³)	Total Value (€)
1	10.82	10.82	ML,LA,LR,N,SF	111386.45	118094.60
Total	10.82	10.82		111386.45	118094.60

A valuation of the standing timber has been carried out, according the timber log prices defined in section 7. Waste timber is not included in the marketable volume figures. The valuation summary is shown in Table 2 for each species. More details about the inventory results and valuation are described in the sections 4, 5, 6 and 7.

Table 2: Volume Results Summary by Species

Species	Stocking (plants/ha)	Avg Tree Size (m³)	Forest Prod (m³/ha)	Total Volume (m³)	Total Revenue (€)
NR	1341.7	2.08	10.71	22429	80342.13
LA	686.28	2.26	10.71	15183	37826.4
LRN	606.0	1.86	10.71	16230	36190.88
SF	11.95	2.25	10.71	227	537.84
Total	2736.84	2.08		84272	118094.60

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3. Gerente de Proyecto e Información Financiera

Administrador de tareas y licencias

Monte: Lochgreen

Licences Operations Tasks

New Licence Activity in Lochgreen

Nombre	Enter Name for Licence Tracker		
Licence Number	Licence Number		
Licence type	Felling		
Licence status	New		
Person	Aitor Arraiza		
Start date	2017	April	24
End date	2017	July	24
Monte / operación	Lochgreen (Todo)		
Send email reminder	<input type="checkbox"/>		
Send sms reminder	<input type="checkbox"/>		
Send notice	7	days before end date	
Notes	Notes about the Licence Tracker		

Nuevo

Operación	Tipo Estado	Fecha De Inicio Fecha De Vencimiento
Inventory Demo	Mapping Closed	28-Apr-2015 25-Feb-2016
thinning_2017	Thinning New	01-Jan-2017 31-Dec-2017
small_for_test	Roading New	01-Jan-2016 31-Dec-2016
thinning_2019	Thinning New	01-Jan-2019 31-Dec-2019
thinning_2005	Thinning New	01-Jan-2005 31-Dec-2005
1st Thinning	Thinning New	12-Aug-2017 22-Aug-2017
testing	Clearfell New	21-Jul-2016 21-Oct-2016
thinning demo sept 2016	Thinning Planned	30-Sep-2016 21-Nov-2016
Anders thinning	Thinning Planned	17-Aug-2016 11-Sep-2016
fertiliser plan 2018	Fertilizer Planned	10-Apr-2018 20-May-2018

Administrador de operaciones

Type to filter Montes

Operaciones

More

Filter by Operación

Monte - Monte Estado -

Tipo - Operación Tipo -

Estado - Operación Estado -

- Assigned By -

- Assigned To -

Search Comunidad/Región/Dire

[New Person](#) | [People](#)
[New Company](#) | [Companies](#)

Contactos (Personas y empresas)

Search:

Name	Email	Your Reference
Treecutters Ltd Supplier company	first@email.com	buddies of ours
Mr. John Kelly Supplier person @ Treecutters Ltd	john@abc.com	Dub
Mr. Paddy Murphy Staff person @ Treecutters Ltd	pmurph@email.com	a good lad



MANAGE

3. Gestor de Proyecto e Información Financiera

Gestor de Contratos y Facturas

Contracts | Contractors | Invoices | Receipts

rack

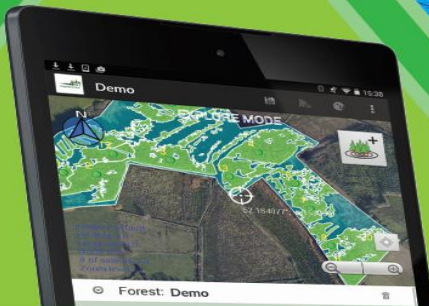
Contracting Companies

List of Contracts

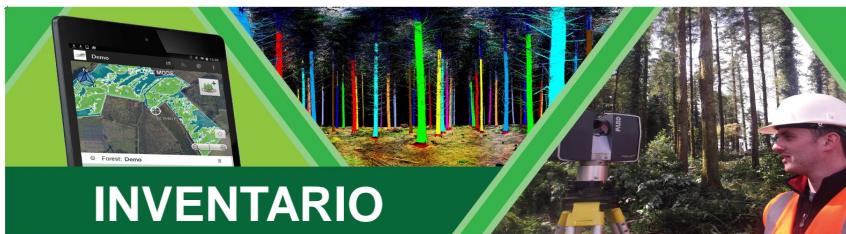
Name	Status	Contractor	Start Date	End Date	Value	Invoices	Destroy	Forest	Operation	Owner	Files
blab	In Progress	First Contractor	2015-10-08	2016-10-08	5000.00	Invoices	Destroy				Contract Files
Flu zebla	Terminated	First Contractor	2015-10-22	2015-10-22	2000.00	Invoices	Destroy				Contract Files
Build wall	In Progress	second contractor	2015-10-22	2018-10-22	8000.00	Invoices	Destroy				Contract Files
Build road	In Progress	John Doe	2015-11-11	2016-11-11	15000.00	Invoices	Destroy	Mark_example	clearfell_2018		Contract Files
								OK18_34	thinning_2019		
alex	In Progress	First Contractor	2015-11-20	2016-11-20	7000.00	Invoices	Destroy	71781		Grigorescu Vlad Mihai Grigorescu Sotire Mihai Grigore Ion	Contract Files
Steads	In Progress	Silvexant	2015-11-23	2016-11-23	8000.00	Invoices	Destroy	72168		Andresescu Presdy, Frazeanu Maria, Jaisca Maria, Petrescu Eugenia	Contract Files

Flujo de caja

Age (Year)	Operation Description (Text)	Timber Revenue (€/ha.)	Other Revenue (€/ha.)	Total Revenue (€/ha.)	Costs (€/ha.)	Cash Flow (€/ha.)	Interest Rate (%)	Net Present Value (€/ha.)
26		0	0	0.00	0	0.00		
27	Grant	0	200	200.00	0	200.00		
28		0	0	0.00	0	0.00		
29		0	0	0.00	0	0.00		
30		0	0	0.00	0	0.00		
31		0	0	0.00	0	0.00		
32		0	0	0.00	0	0.00		
33	Road construction	0	0	0.00	50	-50.00		
34	Final Harvest: Clearfell	39,443	0	39,443.37	0	39,443.37		
		39,443.37	200.00	39,643.37	50.00	39,593.37	5	26,851.77



MEASURE



INVENTARIO

1. Planificación:

Teledetección y planificación de inventario



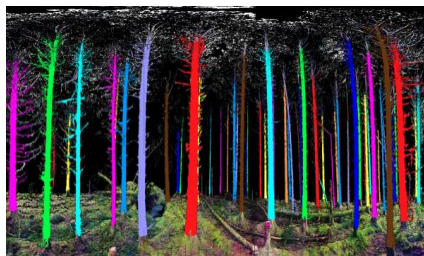
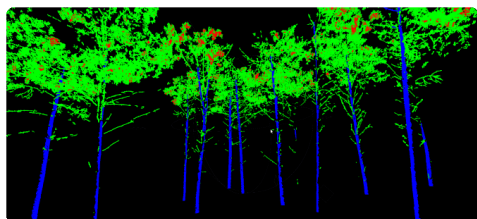
2. Toma de datos en campo:

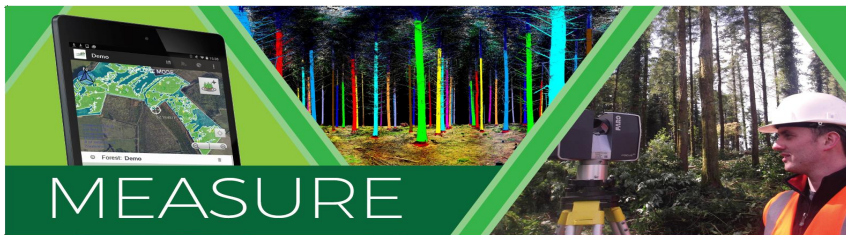
Aplicación innovadora para facilitar cualquier tipo de Inventario



3. Análisis e informes únicos:

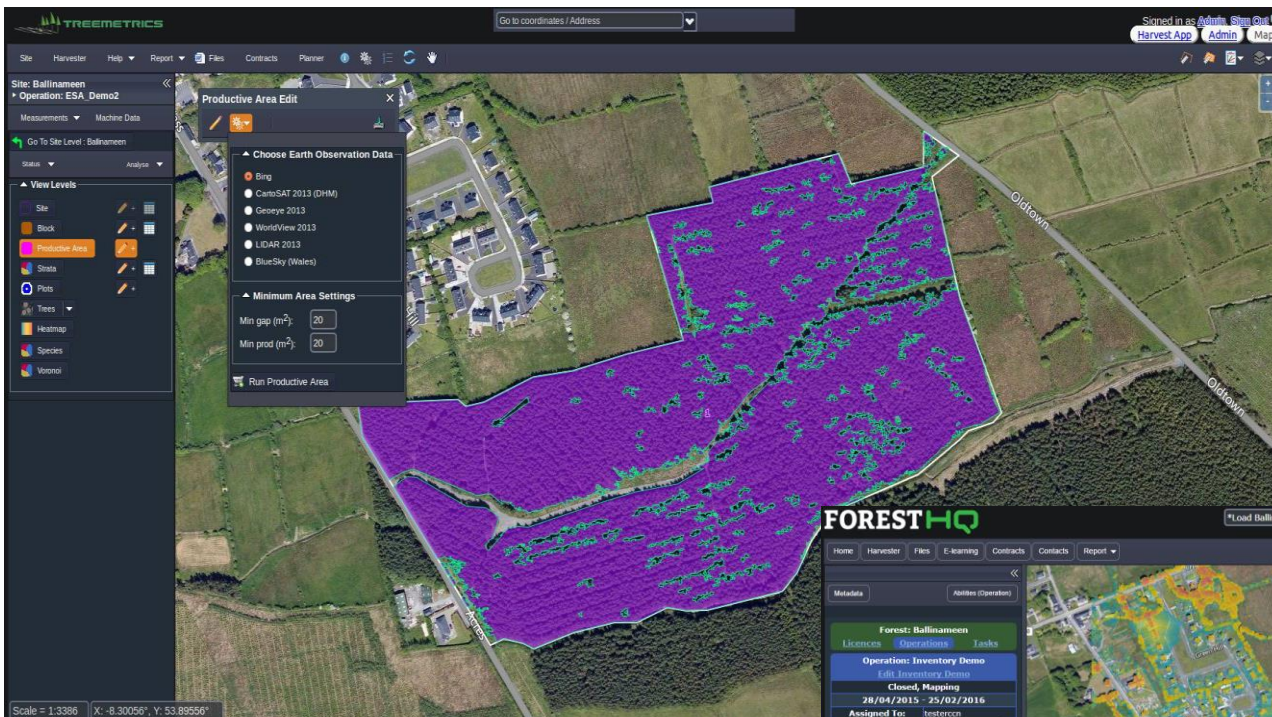
Análisis de Inventario más preciso utilizando la Teledetección y Terrestrial Laser Scanner (TLS)





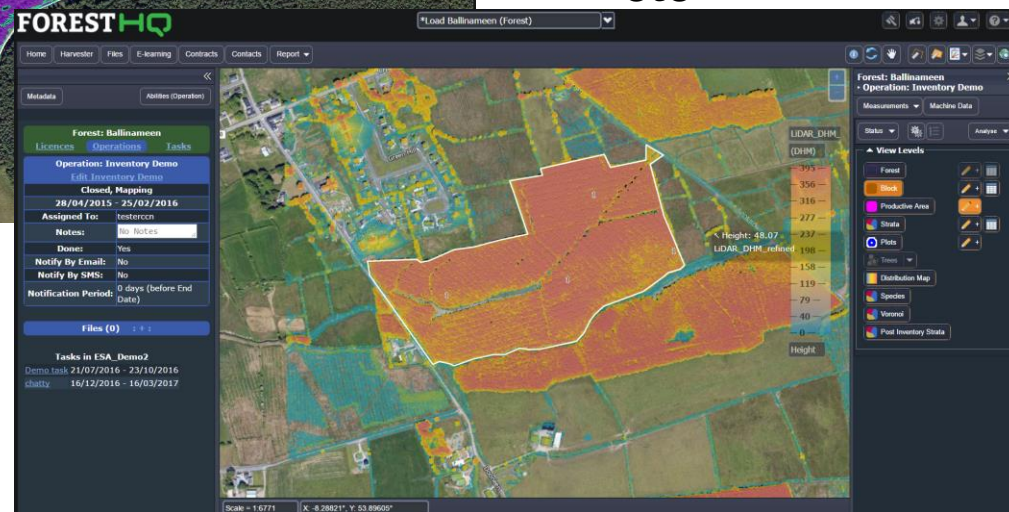
MEASURE

**Planificación y Teledetección:
Permite ejecutar scripts automatizados para el análisis de imágenes**



**LIDAR,
UAV,
Satellite,
Etc.**

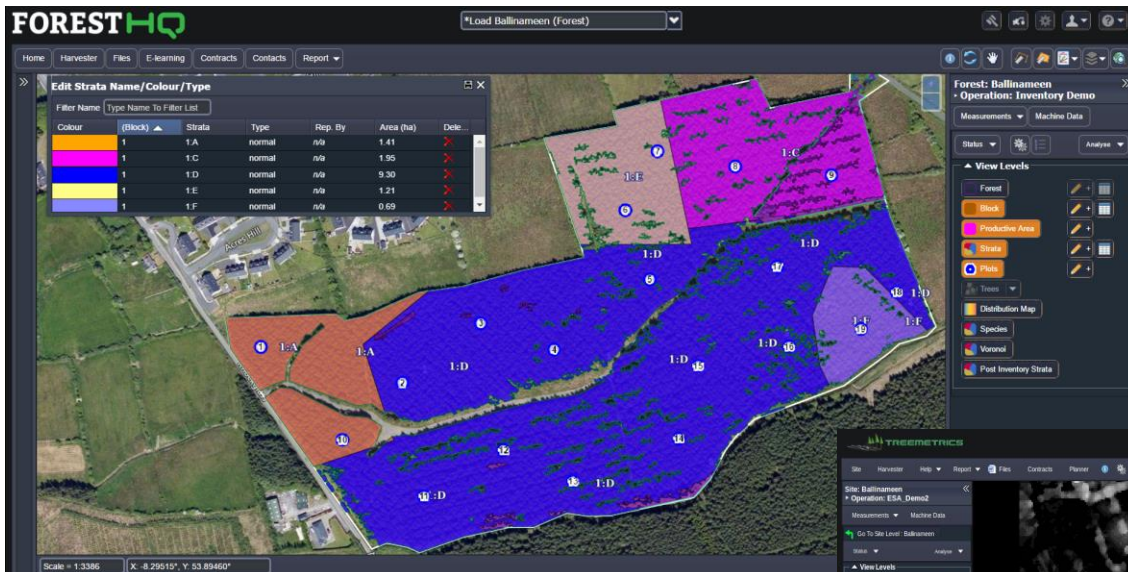
**Cubierta
forestal,
straticacion,
etc**



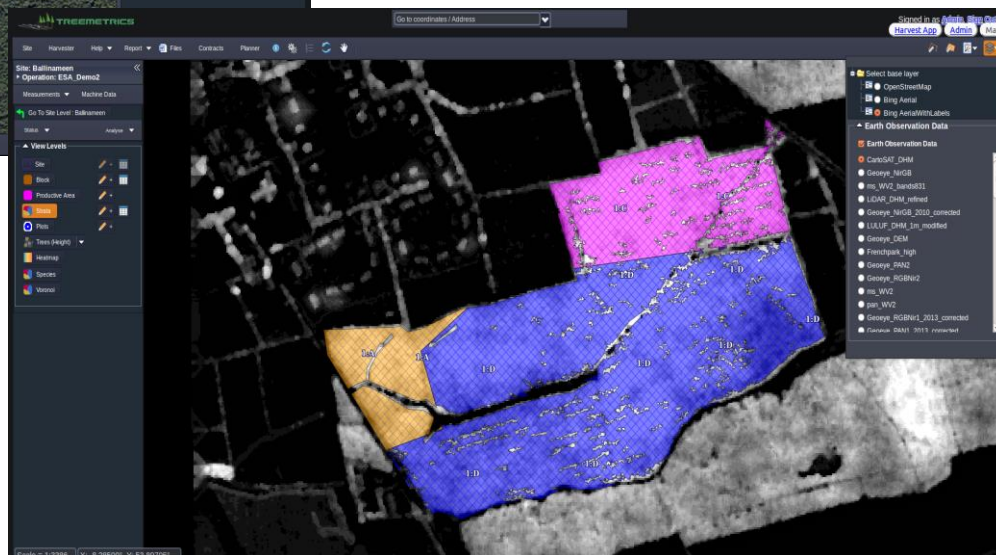


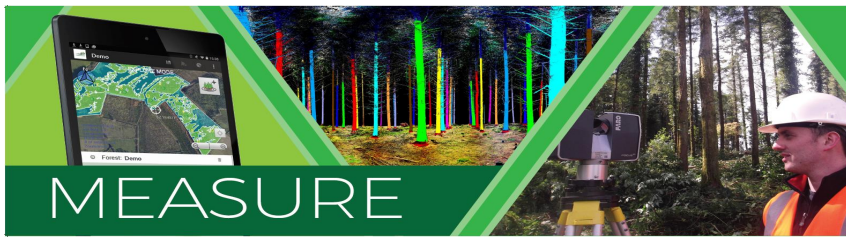
MEASURE

Estratificación Forestal



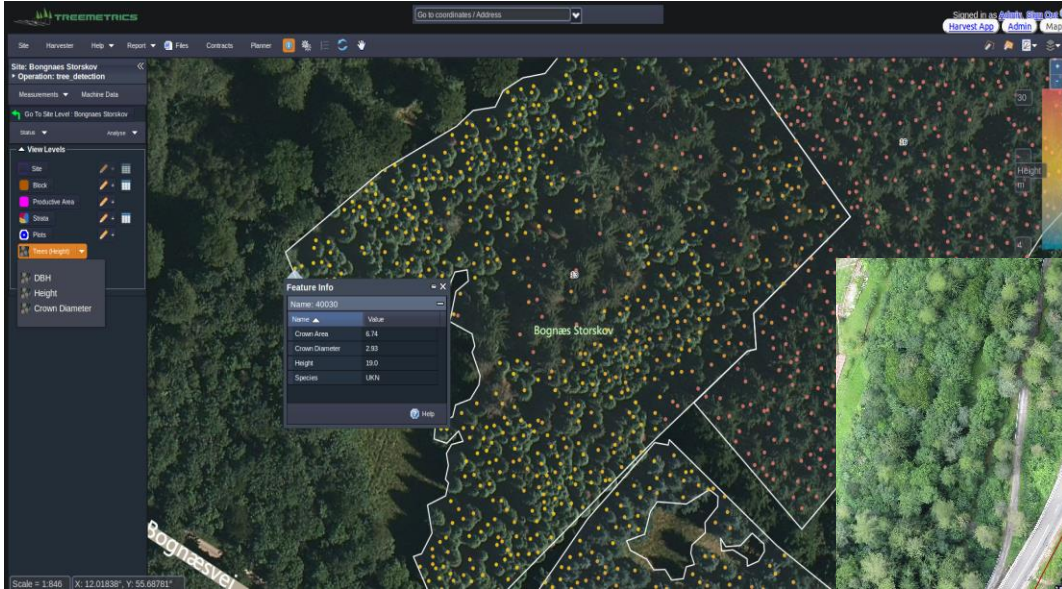
Permite estratificar el bosque, y diseñar la localización de las parcelas de inventario

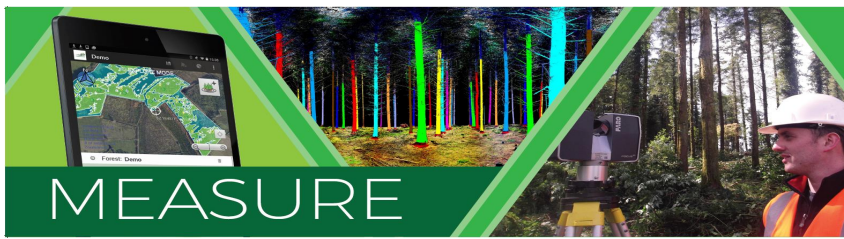




MEASURE

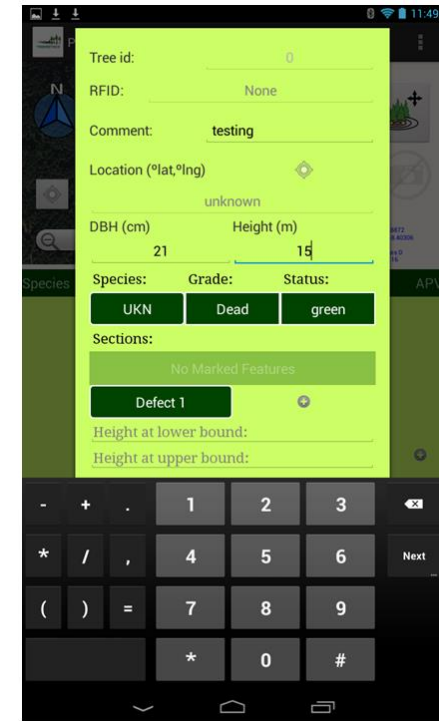
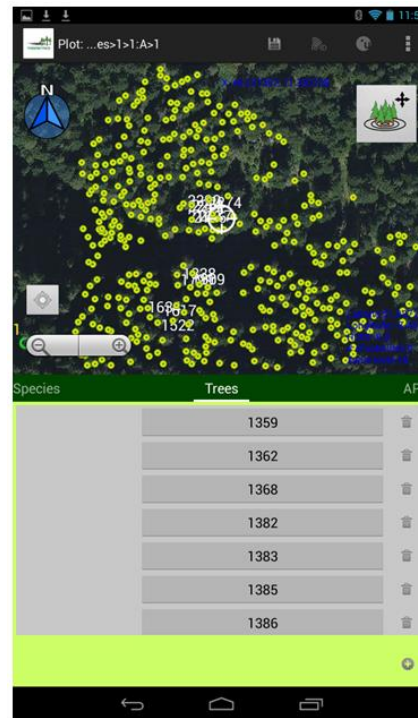
Individualización de árboles





MEASURE

Aplicación para la toma de datos en campo



1. Descargar Plan de Inventario

2. Navegar utilizando imágenes de alta resolución

3. Registro automatizado de los datos utilizando Bluetooth

1. PLANIFICACIÓN



UAV / LIDAR



SATÉLITES

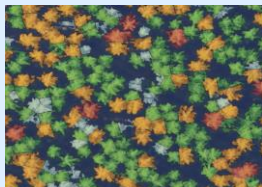
Área forestal productiva



Estratificación



Detección de árboles



2. CAPTURA DE DATOS EN CAMPO

Toma de datos manual



Treemetrics Forest app

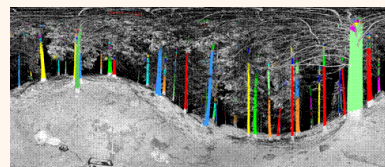


Escáner terrestre

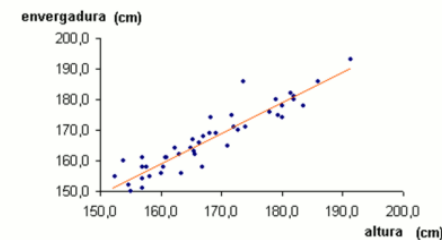
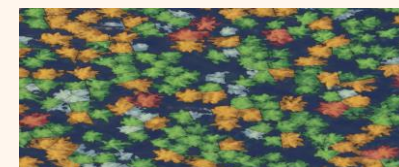


3. ANÁLISIS

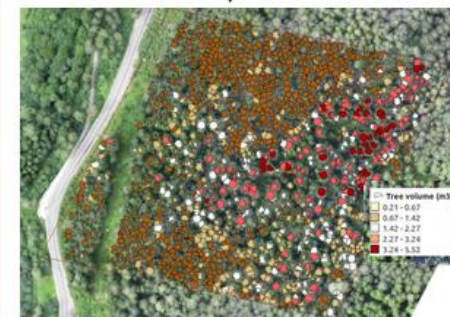
Árboles TLS

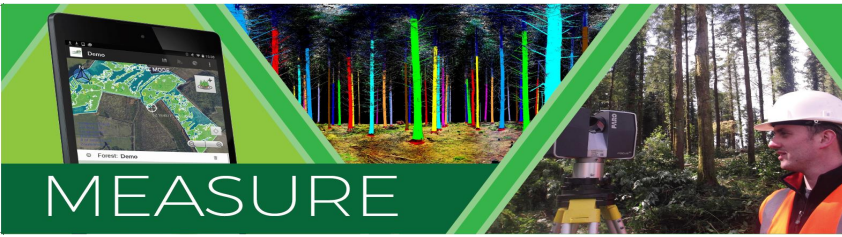


Árboles EO



Árboles finales tras análisis de la regresión

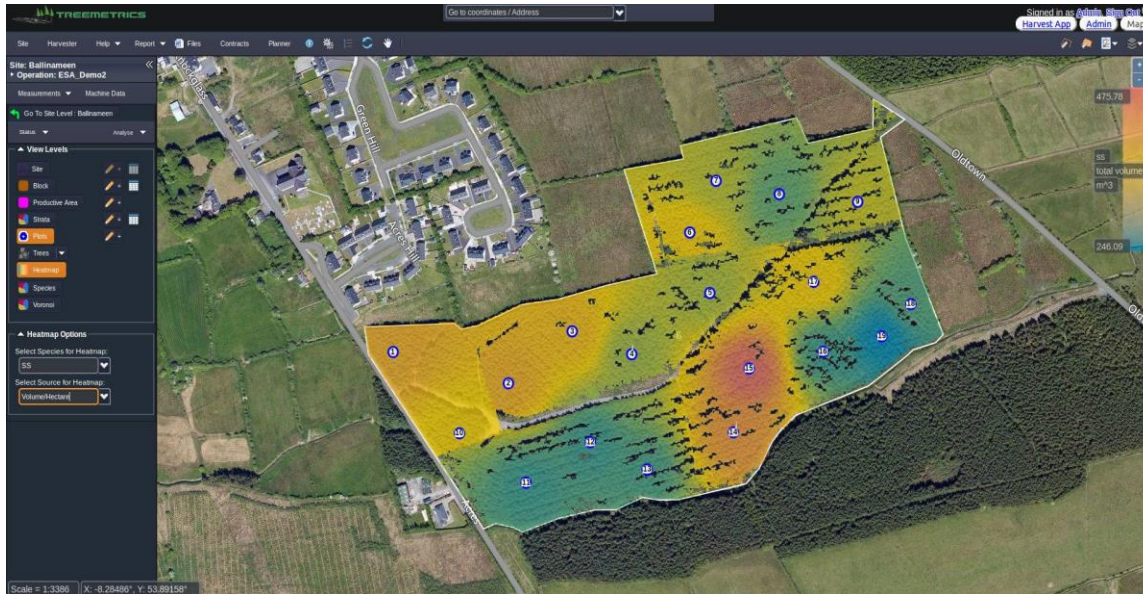




MEASURE

Resultados:

Mapas automatizados, tablas e Informes para ver los resultados del Inventario



Reporting Print Window - Forest Information System

Report Title: Monileasover, scover - Forest Information System

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1. Executive Summary

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The timber volume has been estimated using the Forest Assessor™ pricing simulator. This simulator utilizes the log extraction described in section 4.1. The timber volume has been estimated independently for each species, as shown in Table 1. Timber that did not meet the log specifications has been classified. Visible timber is not included in the marketable volume figures. More details about the inventory results are described in section 4.

Forest Unit	Area (ha)	Plant Area (ha)	Species	Stock (m³/ha)	Year Volume (m³)
1	14.55	14.55	SS,ALN,PI	117086.44	117086.44
Total	14.55	14.55		117086.44	117086.44

A valuation of the standing timber has been carried out, according to the timber log prices defined in section 7. Visible timber is not included in the marketable volume figure. The valuation summary is shown in Table 2 for each species. More details about the inventory results and valuation are described in the sections 4, 5, 6 and 7.

Species	Stocking (m³/ha)	Avg Tree Height (m)	Mean DBH (cm)	Year Volume (m³)	Year Stocking (m³)
ALN	11441.47	2.38	63.71	22645	663632.18
PI	4462.28	2.38	63.71	10180	297650.4
SS	1455	1.48	131.71	65208	247612.86
SP	114.95	2.38	63.71	227	5831.84
Total	27944.44	2.38	63.71	64774	117086.44

Checked Report: 1 | 2019-07-26 14:23:47

2. Forest Description

The forest stands analyzed in this document are located according to the map shown in Figure 1 (below). Further maps detailing the various forest types are included in Appendix 2.

esa_demo2

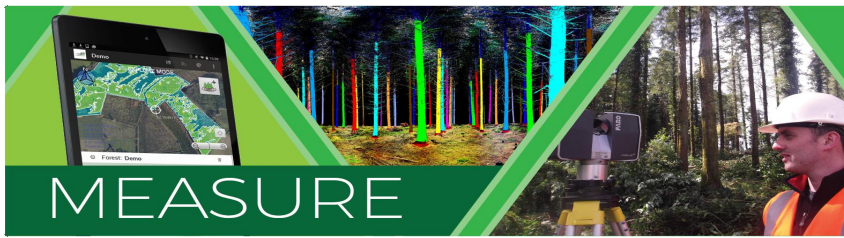
Unit Path	Unit Name	Productive Area (ha)	Plant (Year)	Current Highest (€/m³)
esa_demo2	esa_demo2	14.55	1970-01-01	300.00

Added To Auction System | Place Bid

Species Name	Scan type	Top Height (m)	Mean Volume (m³/ha)	Sample Stems (Nr.)	Stems (Nr.)	Quadratic Mean DBH (cm)	Stocking (stem/ha)	Volume per ha (m³/ha)	Total Volume (m³)
SS	scanner	18.2	0.35	433	13,999	24.1	962	338	4,912
Total	scanner	-	0.35	433	13,999	24.1	962	338	4,912



LiDAR Terrestre
Terrestrial Laser Scanner (TLS)

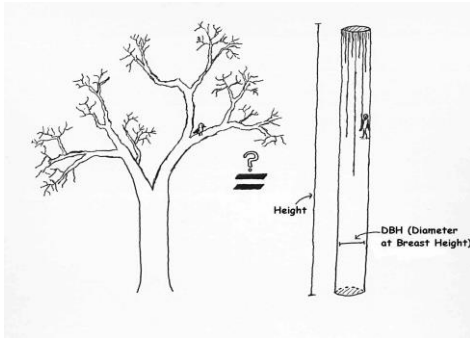


MEASURE

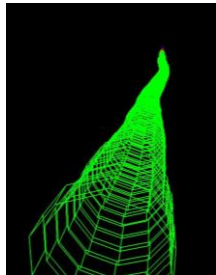
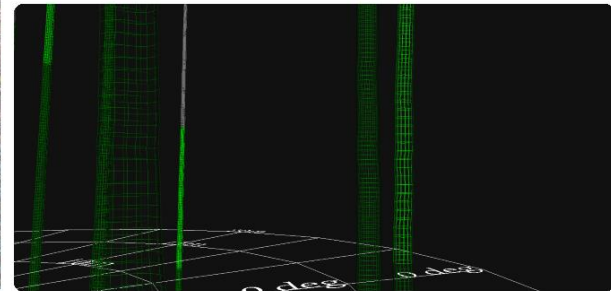
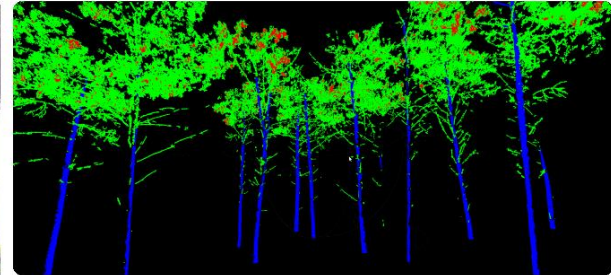
Cheaper and smaller scanner are now available !!



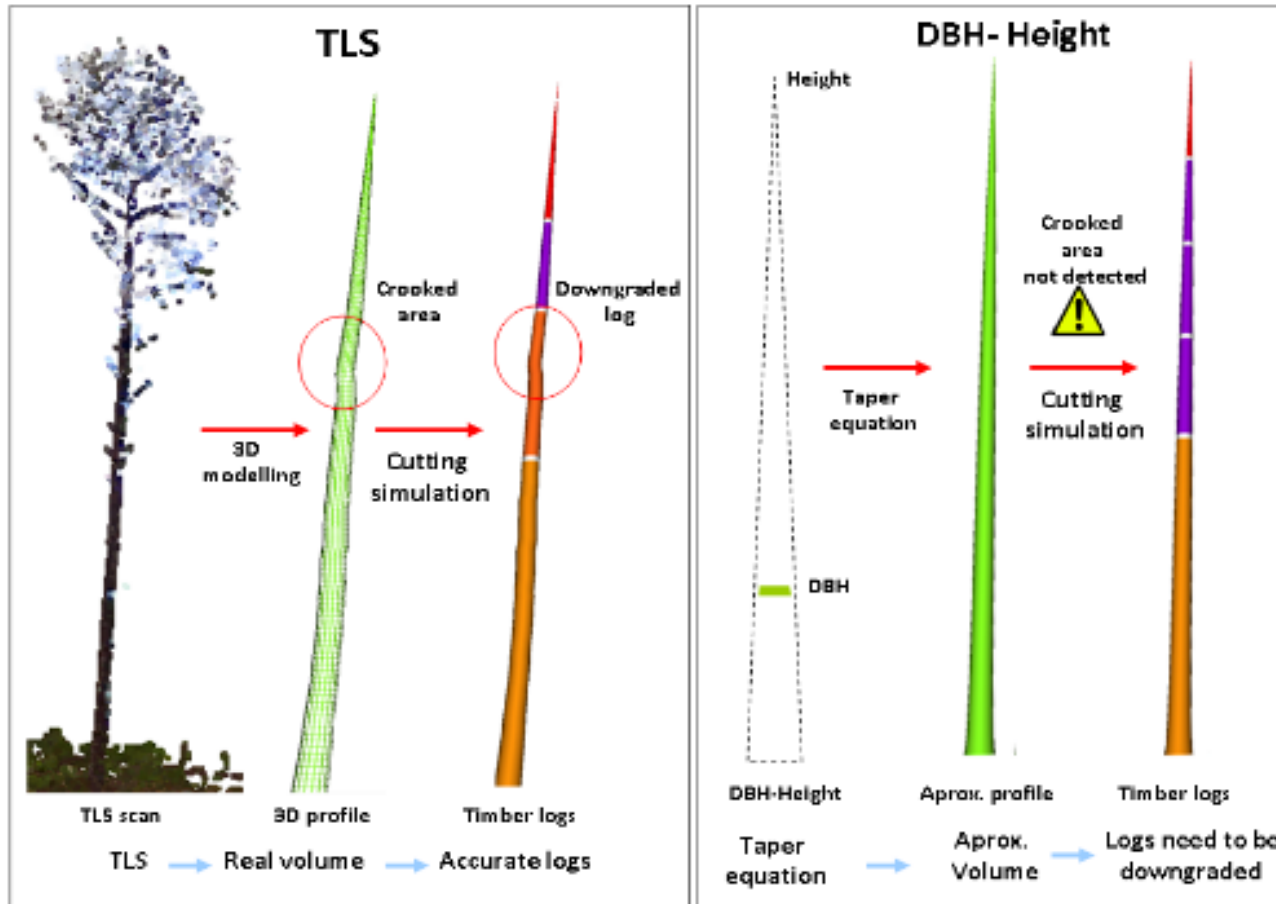
- Automated measurement (2min)
- Thousands points / tree
- Actual tree level shape
- **Cost savings !**



- Slow measurement
- 2 points / tree
- Inaccurate models



Sistema compatible con diferentes modelos 3D



Simulador de Corta Virtual



1. Productos e instrucciones de corta personalidos por el usuario

3.0m Pulp	Other	Other
3.1m Pallet (12cm)	3.0m Pulp	3.0m Pulp
3.1m Pallet (12cm)	3.1m Pallet (12cm)	3.0m Pulp
3.1m Pallet (12cm)	3.1m Pallet (12cm)	4.9m (16cm)
3.1m Pallet (12cm)	4.9m (18cm)	4.9m (16cm)
4.9m (20cm)	4.9m (18cm)	4.9m (16cm)

2. Comparacion e inspeccion de productos maderables en línea

Enter Full Screen

- Wireframe
- Grid
- Show Stems
- Assortments
- Quality Codes
- Cutting Instructions test3
- Show Dead/Mishapen etc.

Jump to Center

Cutting Instruction Values

- 4.9 Sawlog
- 3.1 Green
- Pulp Upm
- 2.5 Pallet
- Waste





Productivity	Log Optimisation	Log Dimension	Average Tree Integrity	Thinning
235	23-04-2015	9 days active	0.311	0.309
All Species				
All Machines				
Last Date: Thu 23-04-2017				
5,233	823	0.311		
286	771	0.309		

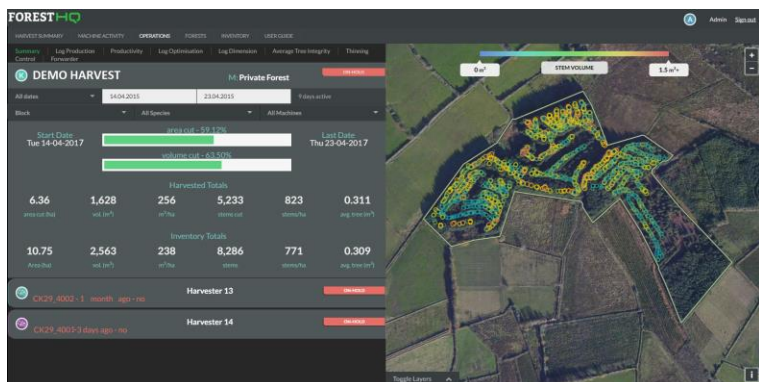
HARVEST



HARVEST

Control en tiempo real de las operaciones de corta

1. Datos de corta en tiempo real (Los datos se transmiten incluso cuando la red móvil no está disponible)



2. Sistema de Navegación en el vehículo (Mayor eficiencia y seguridad)



3. Seguimiento y monitorización en tiempo real de la corta

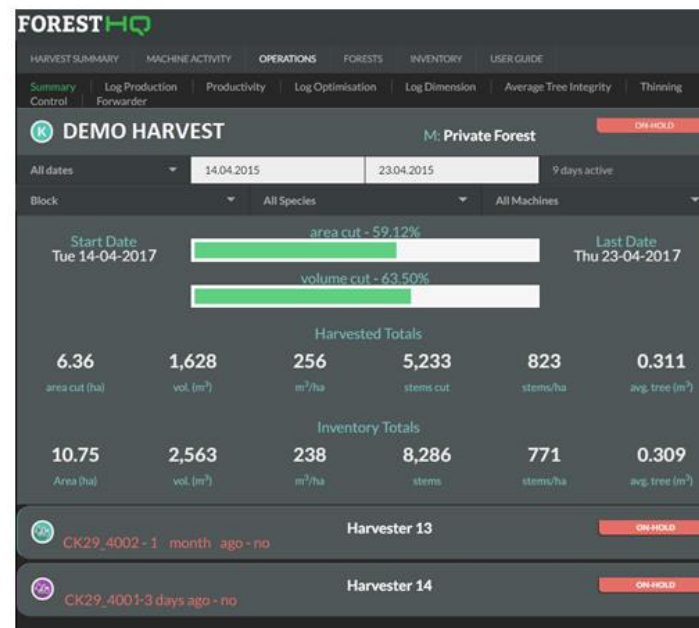
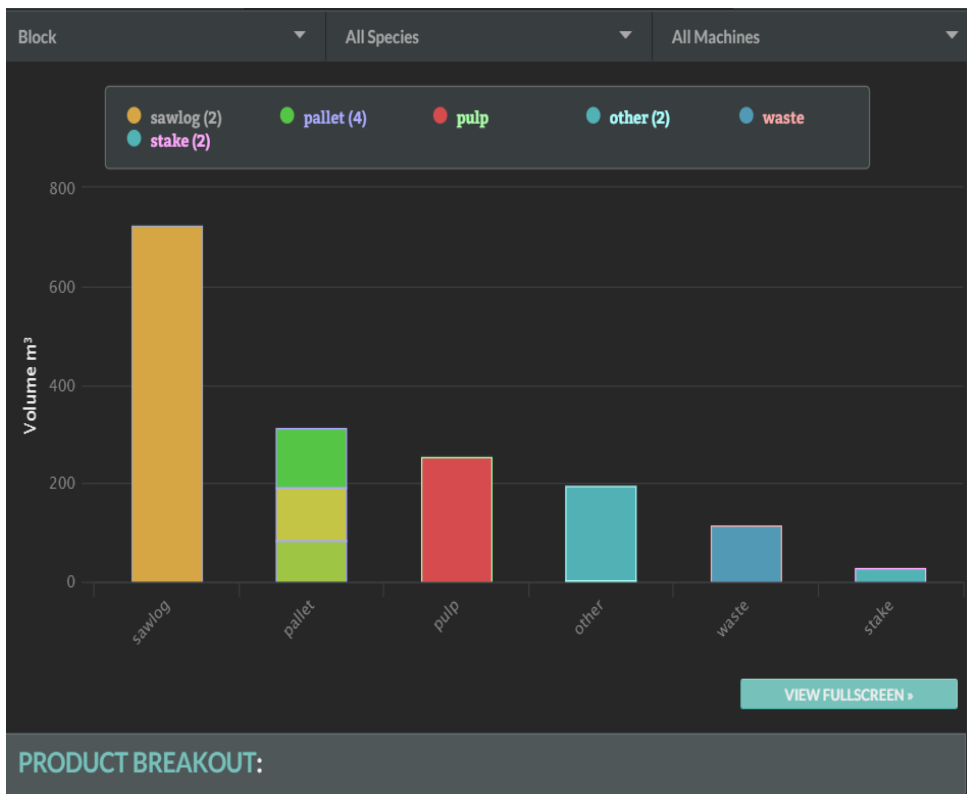
(Información en tiempo real de la extracción de madera)



HARVEST

1. Datos de producción en tiempo real

- *Datos de producción en tiempo real online*
- *Posición y localización de cada árbol cortado*
- *Estadísticas para la optimización de la corta*
- *Ayuda a detectar deficiencias y problemas durante la corta*
- *Mejora las eficiencia de los ingenieros encargados de la corta*





2. Sistema de Navegación en el vehículo

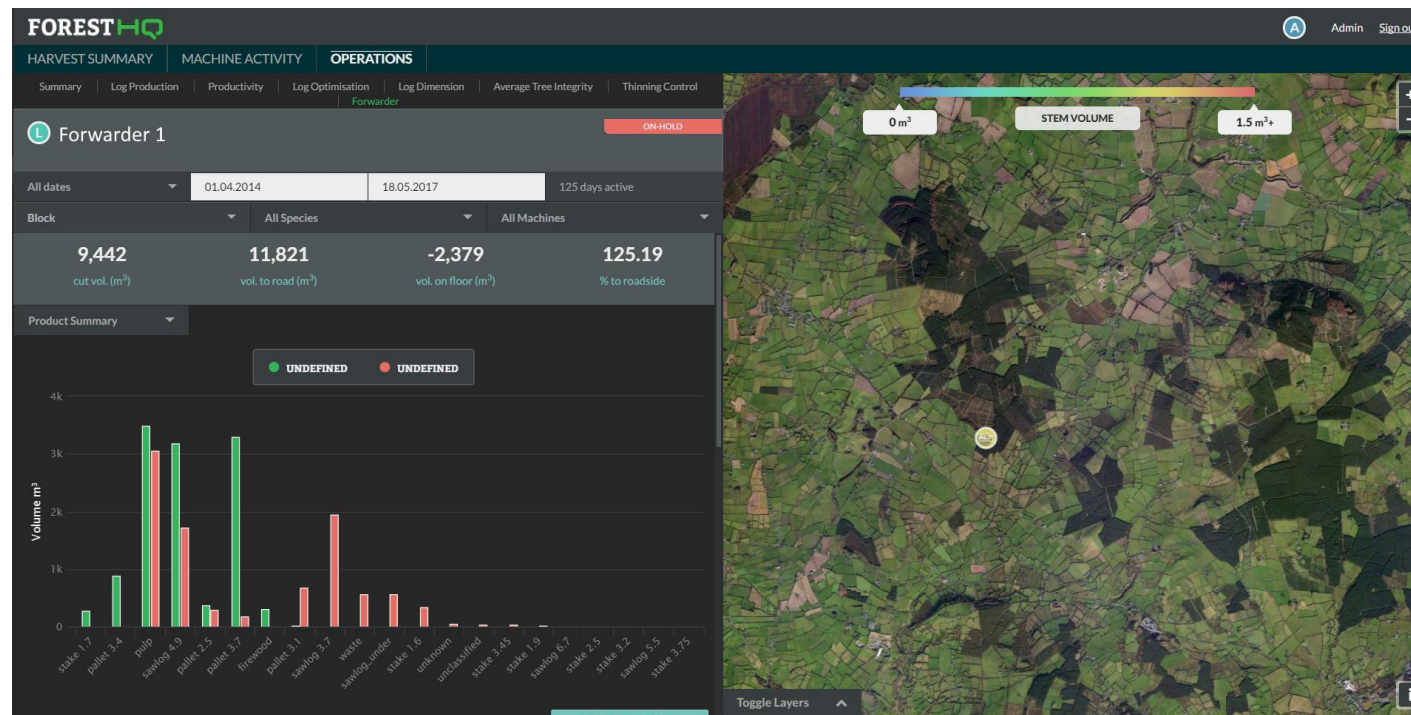


- Sistema de navegación a bordo
- Mejora la eficiencia de los operarios
- Sistema de alarmas: Aviso sobre peligros y límites de bosques
- Ayuda a mitigar los riesgos laborales de los operarios



HARVEST

3. Seguimiento y monitorización en tiempo real de la saca

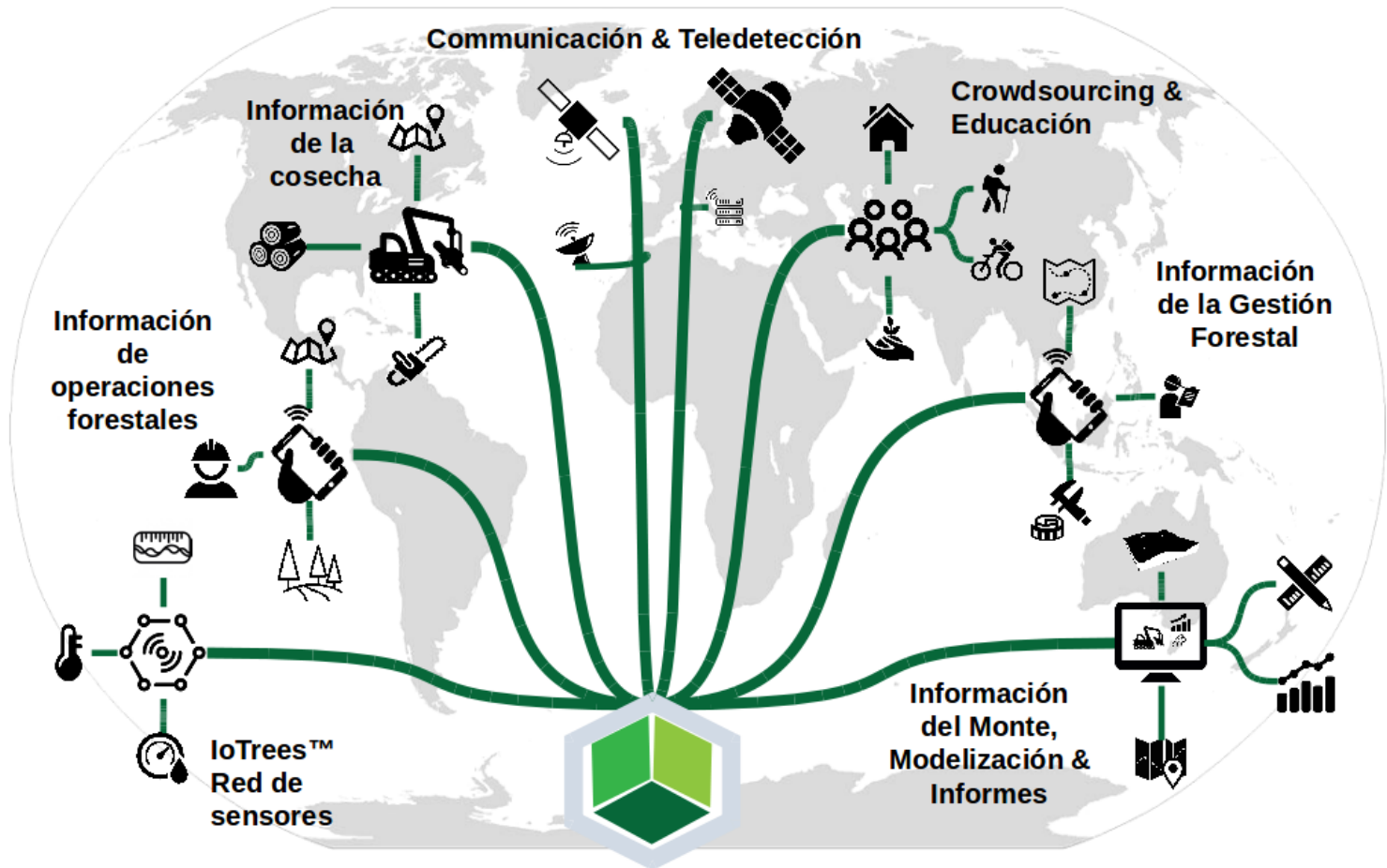


- Trozas cortadas vs. Trozas en cargadero
- Saca con autocargador

FOREST HQ



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AGRADECIMIENTOS

Nombre de la persona o entidad (Franklin Gothic Medium, 16 negrita)

Contacto

(Franklin Gothic Medium, 12 normal)



7º CONGRESO FORESTAL ESPAÑOL

Gestión del monte: servicios ambientales y bioeconomía



26 - 30 junio 2017 || Plasencia
Cáceres, Extremadura



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