



## 1001 UTILIDADES DAS IMAGENS DE SATÉLITE: “Imagens ajudam a superar os desafios do campo”



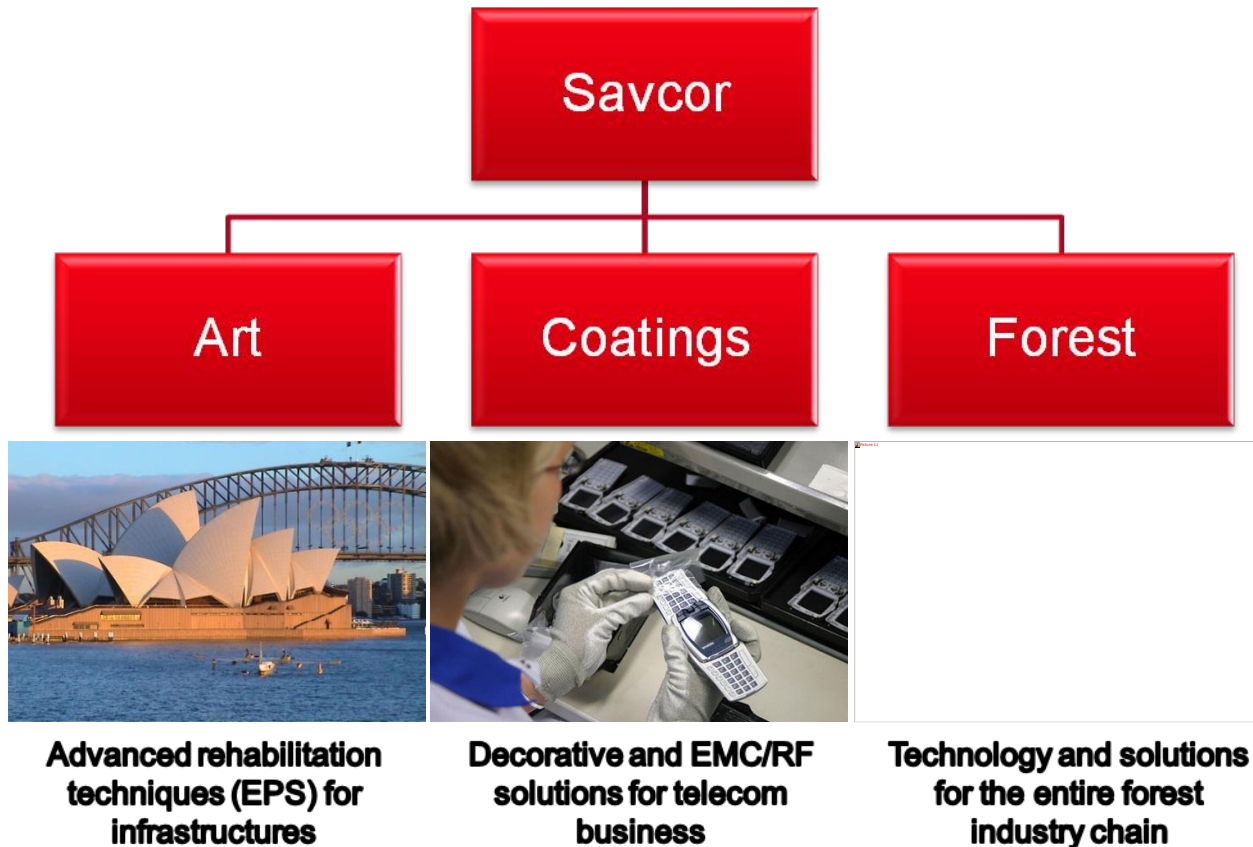
**Aplicação da tecnologia LASER  
aerotransportado para inventário de  
florestas plantadas – Um caso de uso.**

SAVCOR

Matheus Felipe Zonete  
[matheus.zonete@savcor.com](mailto:matheus.zonete@savcor.com)



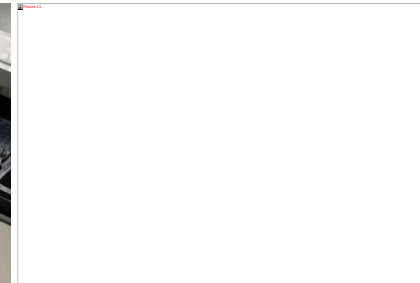
# Grupo SAVCOR



**Advanced rehabilitation techniques (EPS) for infrastructures**



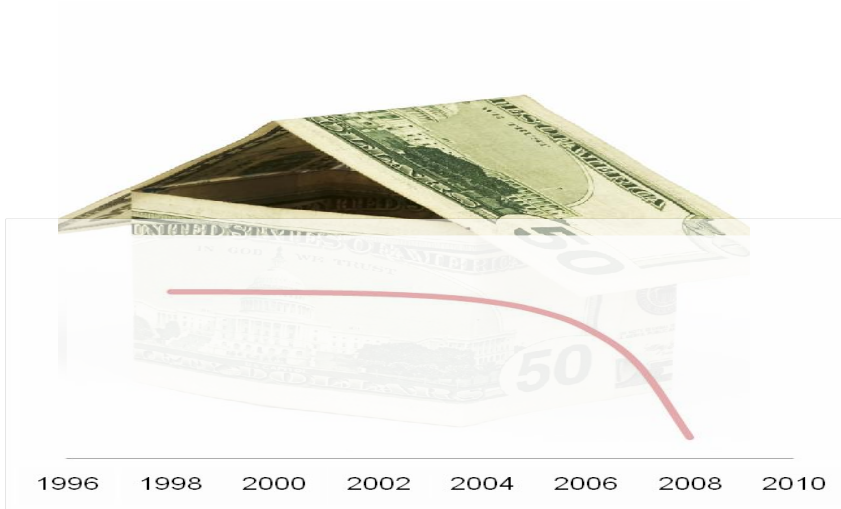
**Decorative and EMC/RF solutions for telecom business**



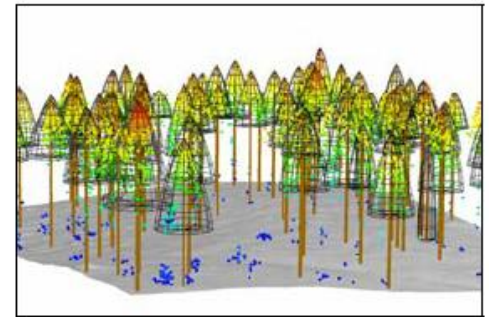
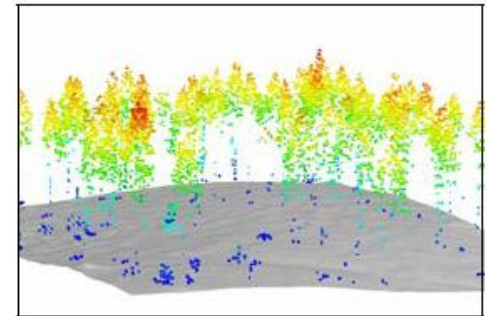
**Technology and solutions for the entire forest industry chain**

# Tecnologia Laser Aerotransportado

**Custos**



**Tecnologia**



# A contribuição da Tecnologia Laser para o setor florestal

## Inventário

- Inventário Florestal – nível de talhões
- Inventário em nível de árvores
- Biomassa / Seqüestro de Carbono
- Inventário de prospecção

## GIS

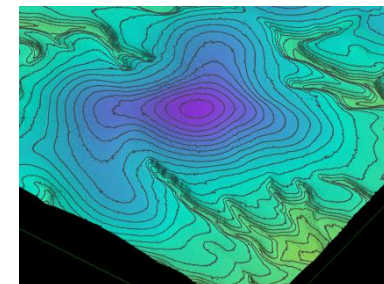
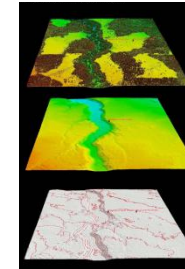
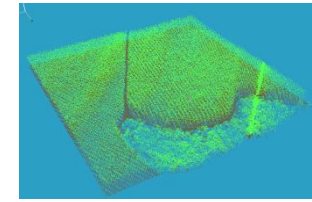
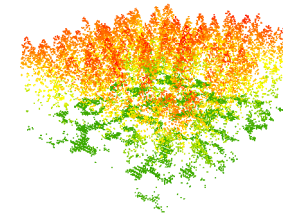
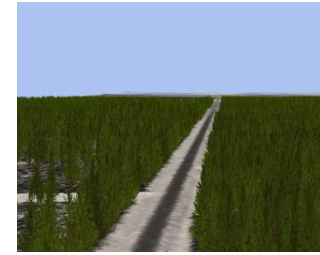
- DTM
- Modelos Hidrológicos
- Estradas
- Alocação de reservas

## Operacional

- Micro-Planejamento operacional
- Plano de colheita

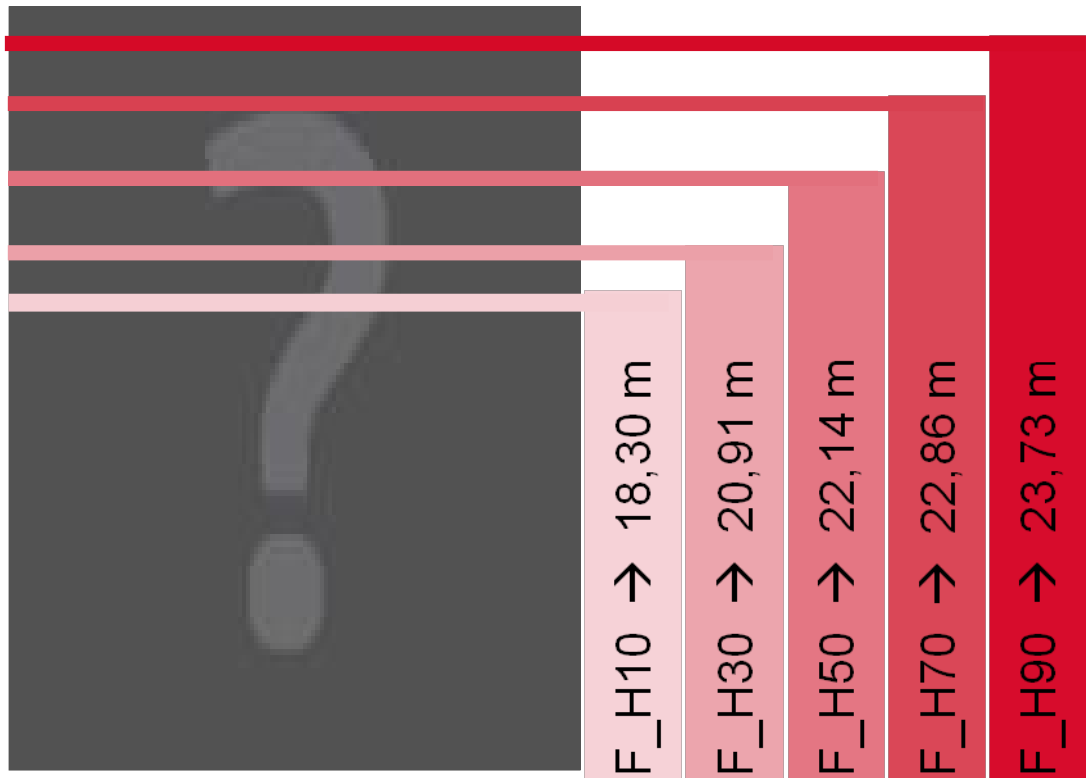
## Outros

- Prevenção a incêndios
- Ataque de pragas
- Identificação de sítios



# Aplicação da tecnologia Laser - Caso de uso

## Processamento dos dados ALS



Variáveis Independentes		
f_h10	f_p10	f_veg_2m
f_h30	f_p30	f_havg
f_h50	f_p50	f_tot
f_h70	f_p70	f_hstd
f_h90	f_p90	age

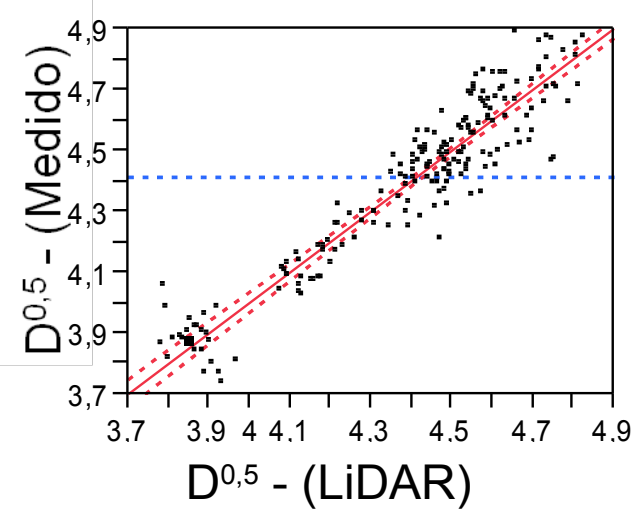
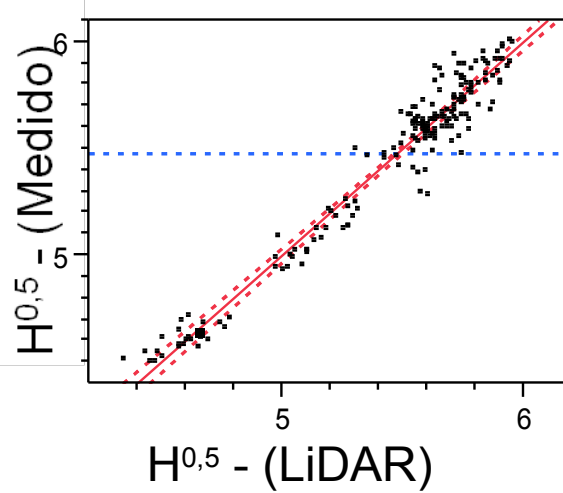
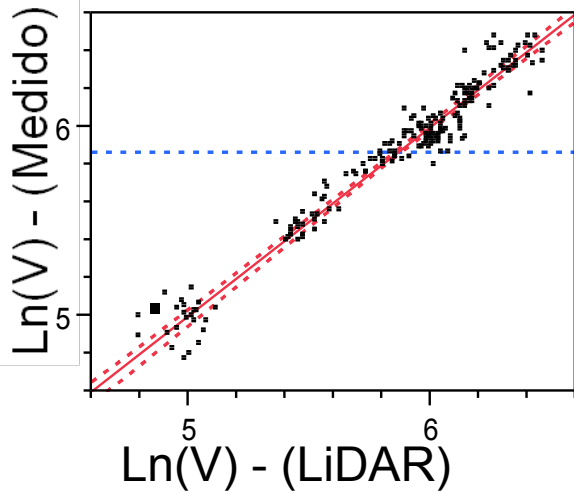


# Alguns Resultados

**Volume**

**Altura**

**Diâmetro**



$R^2 = 0,94$   
RQEM = 0,02%



$R^2 = 0,94$   
RQEM = 0,03%



$R^2 = 0,88$   
RQEM = 0,04%



# Aplicação da tecnologia Laser - Caso de uso

## Investimento necessário

Inventory Budget					
		Traditional	LiDAR	Difference	
Area	200.000	\$3.600.000	\$3.012.000	\$588.000	16,33%
<b>LiDAR</b>					
Data Collection	LiDAR	600000	\$3,00 /ha		\$1.800.000
Processing	LiDAR	600000	\$1,98 /ha		\$1.188.000
Plot Survey	LiDAR	800	\$30,00 /plot		\$24.000
Total					\$3.012.000
Total/ha					\$15,06
<b>Traditional</b>					
Plot Survey	annual inventory 4~7year	60000	\$30,00 /plot		\$1.800.000
Processing	time of the team to calculate	600000	\$3,00 /ha		\$1.800.000
Total					\$3.600.000
Total/ha					\$18,00





www.savcor.com



Custom Development Solutions

**SAVCOR FOREST GROUP OFFICES**

**BRASIL**

Av. João Guilhermino  
n. 261, cj. 152 – Centro  
São José dos Campos - SP  
CEP: 12.210-131  
Tel: +55 12 4009 2609

**FINLAND**

Insinöörinkatu 8  
FIN-50100 Mikkeli  
Tel. +358-20-774 774  
Fax. +358-20-774 7770

**SCOTLAND**

8A. Bridgend Road  
Ind. estate  
Dingwall, Ross-Shire  
IV15 9SL  
Tel. +44-1349-867 970

**DEUTSCHLAND**

Chorherrengasse 3  
D-88364 Wolfegg  
Tel. +49-7527-915 0  
Fax. +49-7527-915 300  
www.savcor.de

**Matheus Felipe Zonete**  
[matheus.zonete@savcor.com](mailto:matheus.zonete@savcor.com)  
55 12 8118 2445

