



**INTERNATIONAL ASSOCIATION OF OPERATIVE MILLERS**

**Arusha – November 2008**

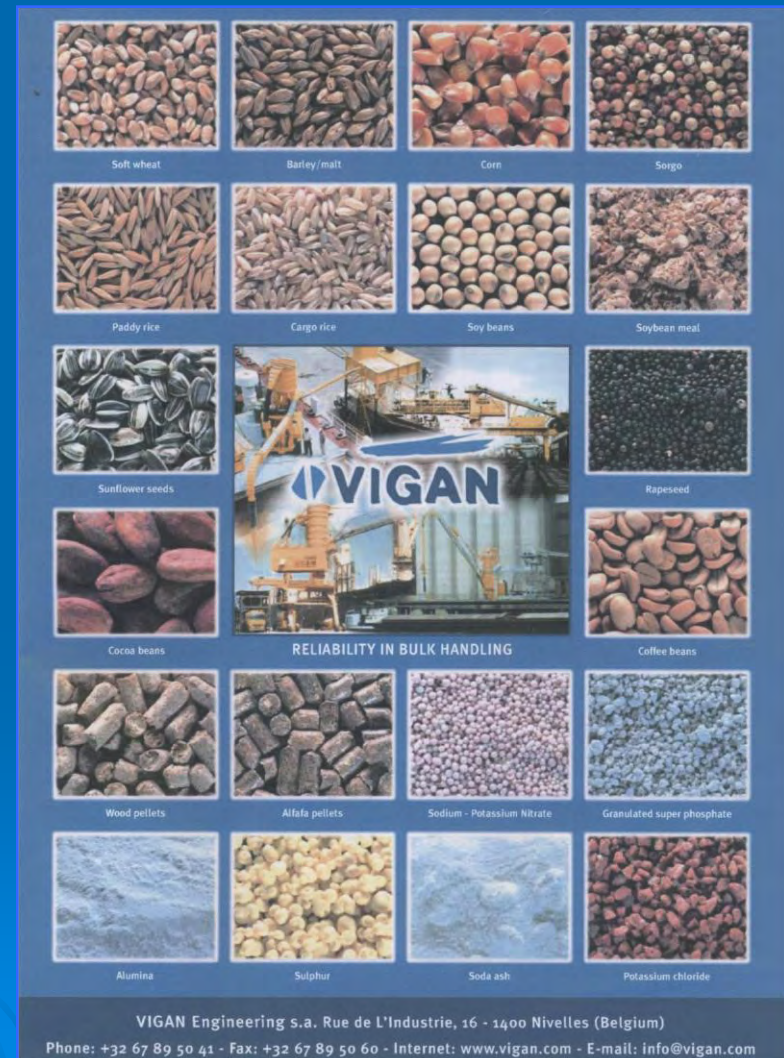
**WORLD LEADER IN MECHANICAL AND PNEUMATIC  
SHIP UNLOADERS**



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**Managing Director**

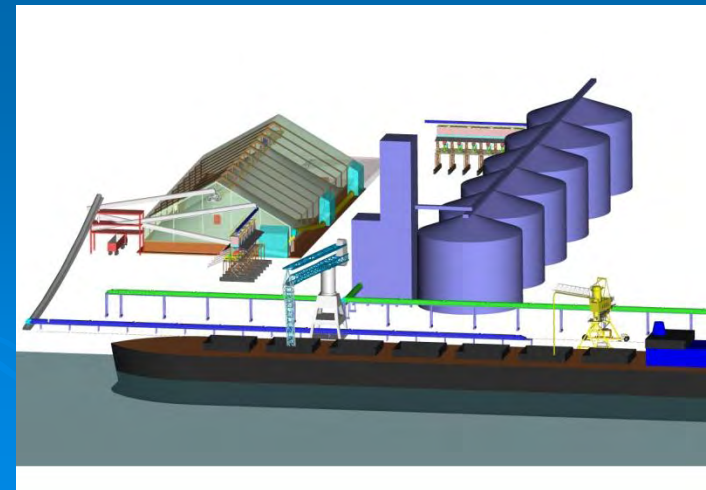
# VIGAN: YOUR PARTNER IN BULK HANDLING

- Grains, cereals, meals
- Fragile : malt, cacao ...
- Chemicals : alumina, urea, sulphur, ...
- Any free-flowing : send us a sample !





# VIGAN offers five families of products ... each personalized to customer specific needs



# Three main technologies focused on unloading grain

- Portable grain pumps – « Vacs »
- Pneumatic ship-unloaders
- Mechanical ship-unloaders



# Portable grain pumps – « Vacs »



- Capacity : 100-200 tph
- Operations : Suck and/or blow
- Vessels : All sizes
- Delivery : 8-10 weeks
- Investment : Eur 100.000 - 200.000
- Complete flexibility :
  - \* vessel to truck
  - \* silo to train
  - \* vessel to vessel, ...
- But... : manpower, maintenance



# Pneumatic Ship Unloaders



- Capacity : 200-600 tph
- Vessels : all sizes
- Delivery : 8-12 months
- Cargo : All free flowing + Soya bean meal
- Investment : Eur 800.000 – Eur 1.5 mio
  
- Made to measure:  
Capacity, rail/tires, elect./diesel, discharge, boom, ...
  
- Main benefits :  
Efficiency, reliability, investment cost, weight

NEW

# Mechanical Ship Unloaders

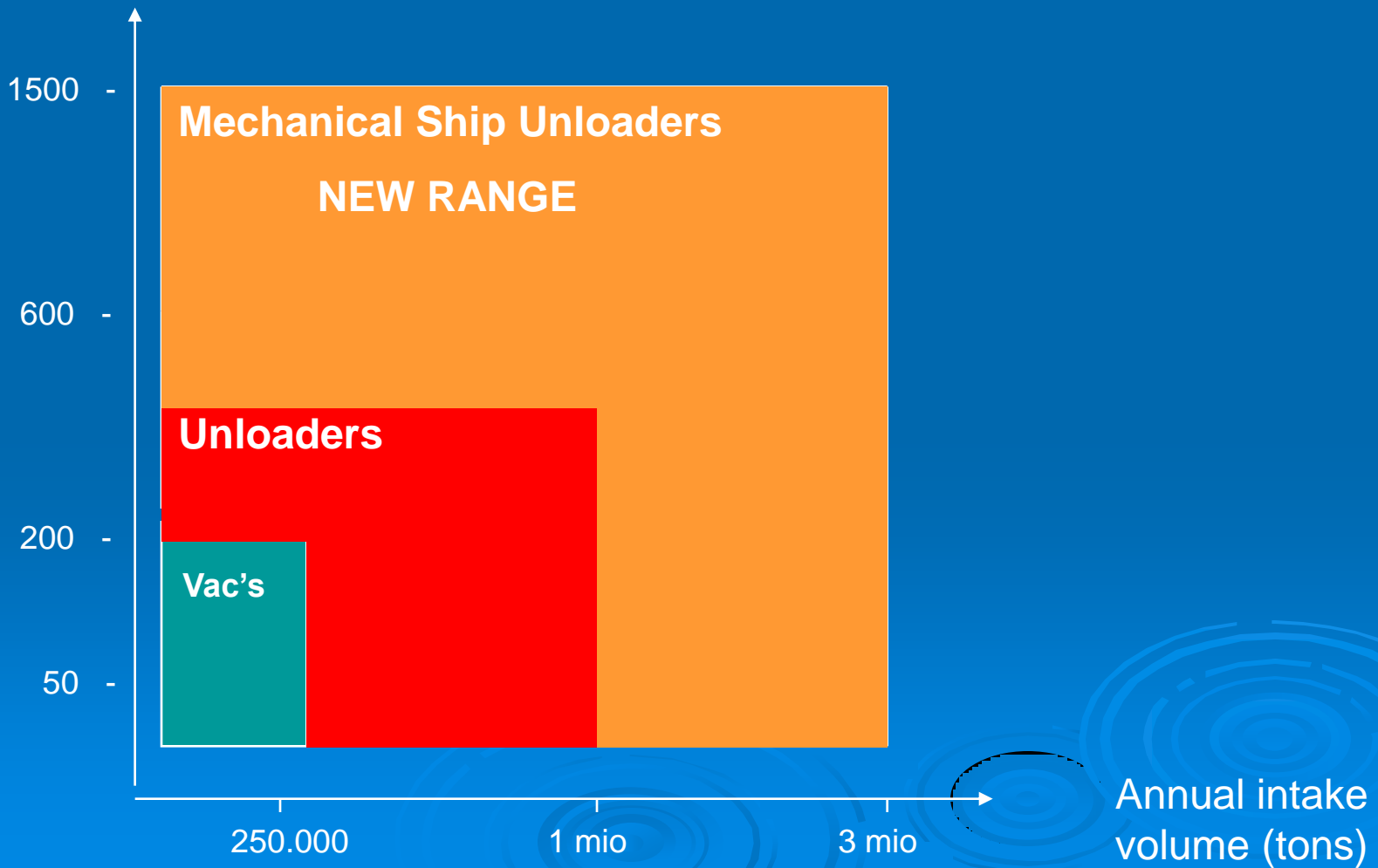
NEW



- Capacity : 600-1500 tph
- Vessels : Panamax, Cape
- Delivery : 10-14 months
- Technologies :  
Double-belt SIMPORTER
- Investment : Eur 1.5 – 3.0 mio
- Main benefits :
  - \* throughput
  - \* electrical consumption

# Estimated Operational Enveloppes

Throughput (tph)





# Pneumatic or Mechanical unloaders : Main decision factors

## Operations

Capacity (tph)  
Annual intake  
Cargo type  
Port lay-out  
Silo-Quay conveyor  
Trucks availability  
...

## Economics

Investment cost  
Electricity cost  
Maintenance cost  
Demurrage costs  
Payback time  
Manpower cost  
...

# Equipment and discharge plans

VIGAN : Theoretical unloading plan of a 60.000 dwt vessel

NAVIRE 120.000 T		1 SIMPORTER 1200 T/H + 1 NIV 400 T/H = 1600 T/H			
MODE	SIMPORTER		NIV		
	QUANTITY T	TIME H	QUANTITY T	TIME H	
FULL HEAP HIGH	7000	5,83	1750	4,38	
FULL HEAP LOW					
HOLD BOTTOM					
HOLD CLEANING					
BOBCAT IN / OUT					
MOVEMENT		0,20			
FULL HEAP HIGH	7000	5,83	1750	4,38	
FULL HEAP LOW					
HOLD BOTTOM					
HOLD CLEANING					
BOBCAT IN / OUT					
MOVEMENT		0,20			
FULL HEAP HIGH					
FULL HEAP LOW	5500	4,58			
HOLD BOTTOM			750	3,75	
HOLD CLEANING					
BOBCAT IN / OUT				0,40	
MOVEMENT		0,20			
FULL HEAP HIGH					
FULL HEAP LOW	5500	4,58			
HOLD BOTTOM					
HOLD CLEANING	1000	3,13	750	5,00	
BOBCAT IN / OUT		0,40			
MOVEMENT		0,20		0,20	
FULL HEAP HIGH					
FULL HEAP LOW	5500	4,58			
HOLD BOTTOM			750	3,75	
HOLD CLEANING	1500	4,89	750	5,00	
BOBCAT IN / OUT		0,40		0,40	
MOVEMENT		0,20		0,20	
FULL HEAP HIGH					
FULL HEAP LOW	2500	2,08			
HOLD BOTTOM					
HOLD CLEANING	1500	4,89	500	3,33	
BOBCAT IN / OUT		0,40		0,40	
MOVEMENT					
TOTAL	45400	46,30	14600	48,00	
TOTAL 1+2	60000		AVERAGE	1248 tph	

Hypotheses of simulation

MODE	SIMPORTER	NIV	TIME H
	DEBIT NOMINAL T/H	DEBIT NOMINAL T/H	
FULL HEAP HIGH	1200	400	
FULL HEAP LOW	1200	350	
HOLD BOTTOM	1200	200	
HOLD CLEANING	320	150	
BOBCAT IN / OUT			0,4
MOVEMENT			0,2

"Global Efficiency =78%"

# Pneumatic or Mechanical Unloaders

## for illustration only

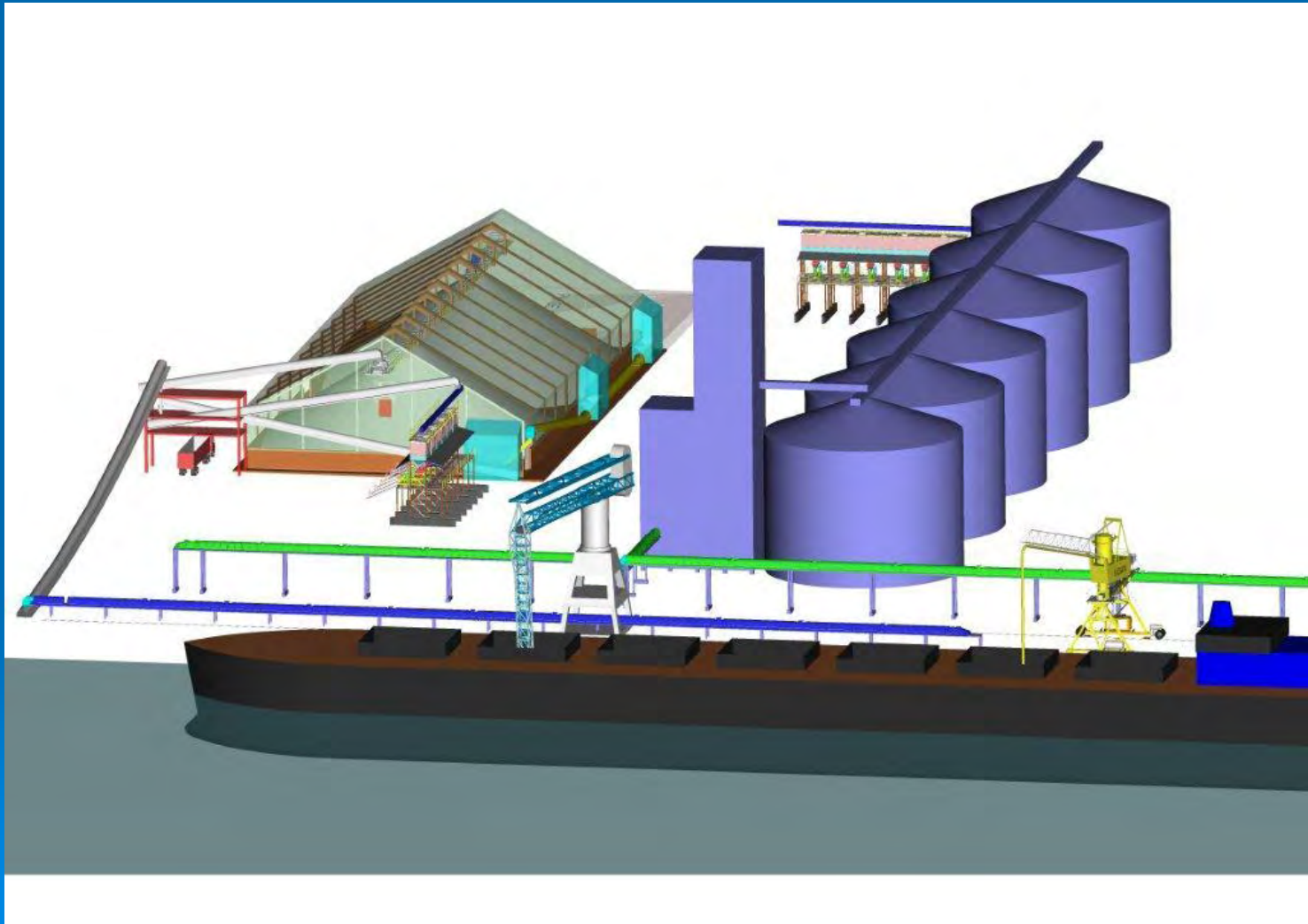
<b>EQUIPMENT</b>	<b>PNEUMATIC</b>	<b>MECHANICAL</b>
Rated capacity	2 x 600 tph = 1200 tph	1 Mechanical 1200 thp
Investment	3.000.000 EUR	2.500.000 EUR
Efficiency	75% = 900 tph	70% =840 tph
<b>VESSELS</b>		
Annual intake	3 mio T	3 mio T
Vessels	50 000 T x 60	50 000 T x 60
Demurrage per day	40.000 EUR	40.000 EUR
<b>OPERATIONS</b>		
Days of operations	3 000 000 tpy 900 tph 20 hpd → 165 days <b>Eur 6.600.000</b>	3 000 000 tpy 890 tph 20 hpd → 178 days <b>Eur 7.120.000</b>
Electrical	0.8 kwh/t 0.05 EUR/kwh <b>Eur 120.000</b>	0.5 kwh/t 0.05 EUR/kwh <b>Eur 75.000</b>
Spares	0.03 EUR/t <b>Eur 90.000</b>	0.03 EUR/t <b>Eur 90.000</b>
Depreciation	<b>Eur 300.000</b>	<b>Eur 250.000</b>
<b>TOTAL COSTS</b>	<b><u>Eur 7.110.000</u></b>	<b><u>Eur 7.535.000</u></b>



NEW

# VIGAN: your partner for turnkey grain terminals

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# SELECTION OF RECENT ORDERS (2007-2008)

VAC'S	PNEUMATIC SHIP UNLOADERS	MECHANICAL SHIP UNLOADERS	GRAIN TERMINAL
OAIC, Algeria	SDTV, Djibouti 2 x 300tph	INTERFLOUR, Vietnam 1 x 1200 tph	SDTV, Djibouti 1200 tph
AJWA, Saudi Arabia	TAME –Soya M. Greece 1 x 500 tph	TAE YOUNG, Korea 1 x 800 tph	Grain & Fertilizers 60,000 tons storage
SEAGRAIN, Egypt	KAPO, Egypt 1 x 300 tph	FAP, Pakistan 1 x 1000 tph	Bagging
BUNGE, Germany	AFRICA, Egypt 2 x 500 tph	...	FAP, Pakistan 1600 tph
...	United Feed, Saudi Arabia 1 x 300 tph		Grain & Fertilizers 120,000 tons storage
	GLOBE, Saudi Arabia 2 x 400 tph		Bagging ...
	FAP, Pakistan 1 x 600 tph		
	KAPO II, Egypt 1 x 300 tph		
	...		

Each case is specific and requires  
a specific advise.

Please contact us!



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