

GAUSSIN MANUGISTIQUE®

Creator of global handling solutions

Manufacturer of handling and self-propelled systems

CONFERENCE SEPTEMBER 04th 2014 @11:20 am

**Container Terminal Horizontal Transportation Full Electricity or LNG?
Turkey and Black Sea Ports are aiming to use alternative energies**





1880 – Eugène GAUSSIN
Metal constructions



1961 – Henri GAUSSIN - Industrial trailers



1970 – Beginning of the containerization



1994 – AIRBUS (FULL ELEC vehicle)



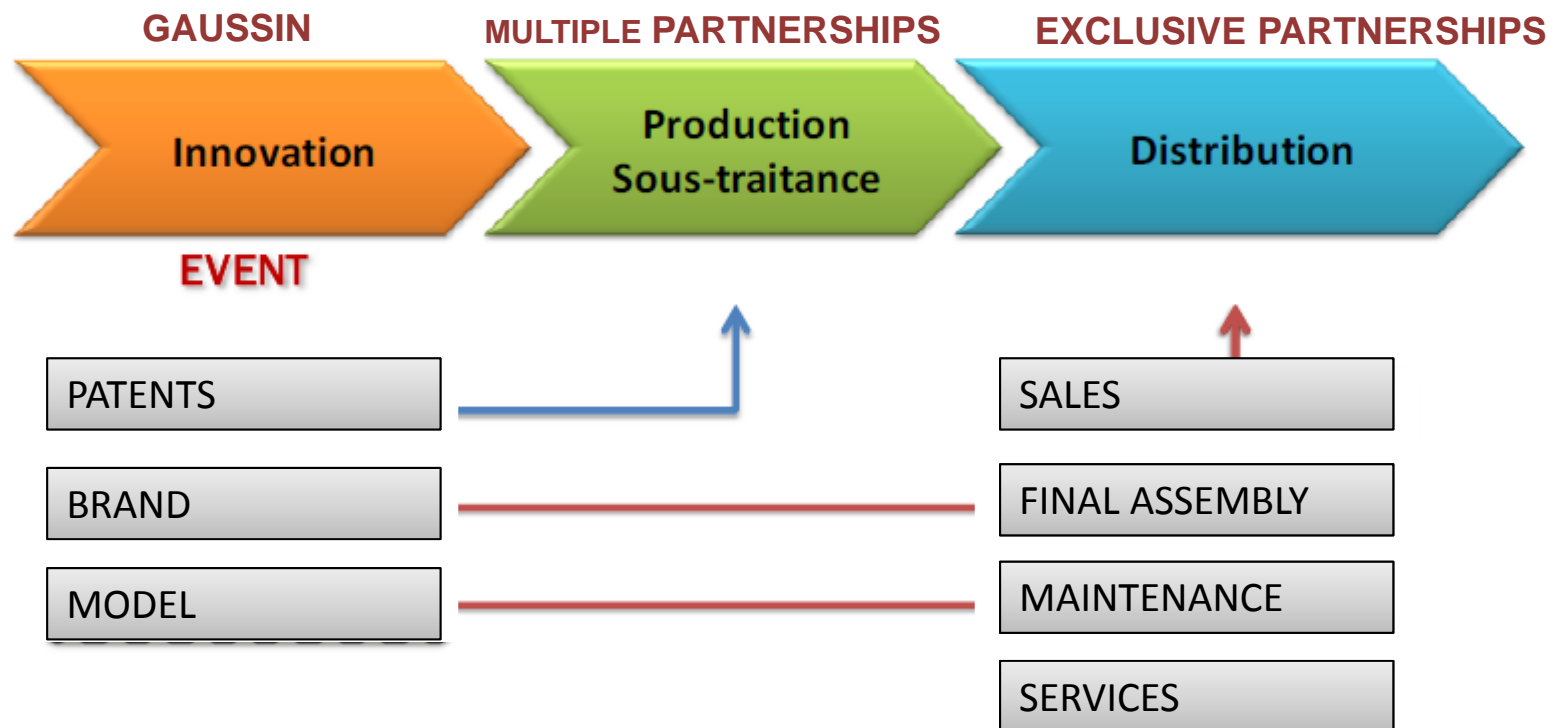
2006 – IPO Listed on the Nyse Alternext



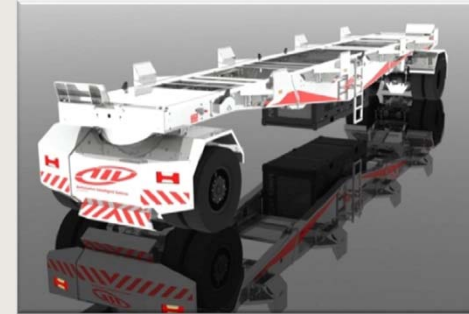
The CEA establishes this partnership through 2 institutes :

- ▶ The CEA (Commission for Alternative Energies and Atomic Energy) is an active partner of the GAUSSIN MANUGISTIQUE Group through 2 institutes :
- ▶ - The CEA LITEN (Laboratory for Innovation in New Energy Technologies and Nanomaterials) ,with more than 50 years of proven experience in batteries and fuel cells for vehicles. The LITEN brings its expertise the GAUSSIN Group to design the Powerpack FULL ELEC and its Battery Management System to guarantee performance and safety
- ▶ - The CEA LIST (Laboratory for Systems Integration and Technologies) has proven experience in robotics, algorithms and simulation software. Their knowledge will be embedded in our AIV©, ensuring the autonomous navigation of the vehicles and enabling to manage the precise berthing operations with ATT© LIFT or AIV© LIFT to the DOCKING STATIONS© or under the cranes (TALK TO CRANE option).





Chronological Recap



2007/08

2009/10

2011/12

2013

2014

Définition & 1st drafts

Prototype
Industrialisation
ATT V1

Commercialisation
Pré-séries V4 et prototype AIV

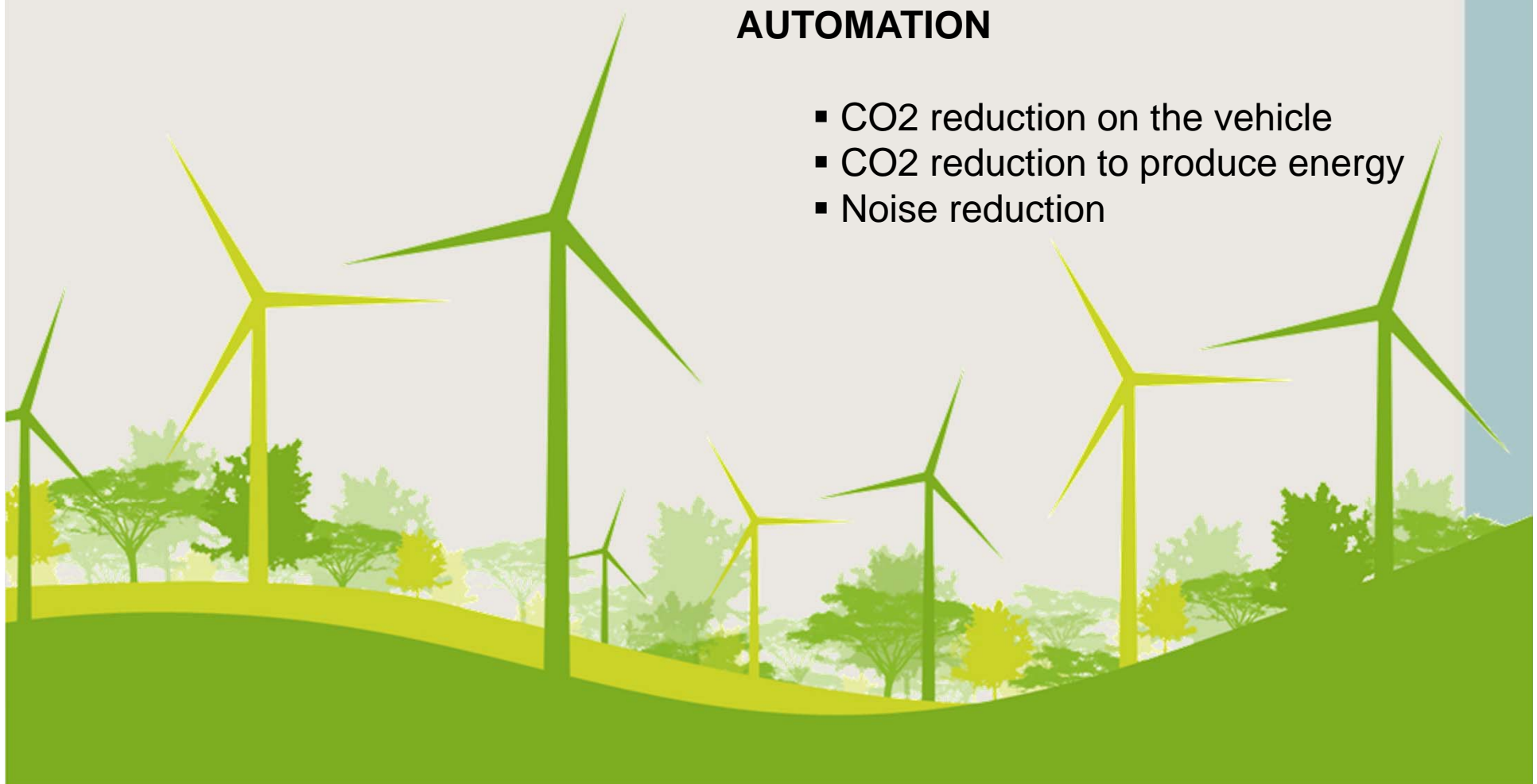
Série ATT V3
ATT Lift
Proto full Elec & Hybrid

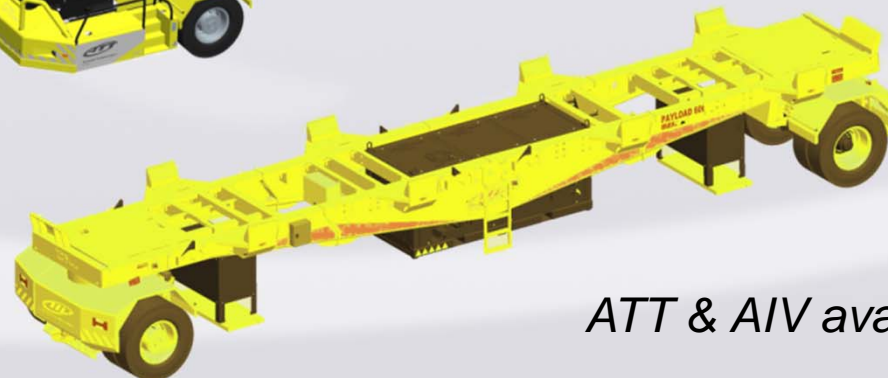
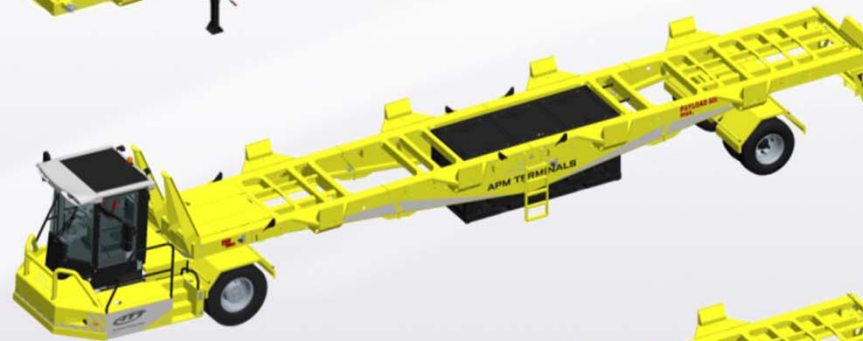
Commercialisation
6 ATT
5 POWERPACK



**SAFETY FIRST
ENVIRONMENT FRIENDLY
AUTOMATION**

- CO2 reduction on the vehicle
- CO2 reduction to produce energy
- Noise reduction





ATT & AIV available on LIFT

The Power of your dreams...





Full elec Powerpack = BATTERY



- Battery type :** Li-ion (Iron phosphate without cobalt, safest technology)
Multi-supplier system.
- Output voltage:** 600V DC
- Energy:** 3 available capacities 80 kWh, 160kWh or 240kWh.
(4h, 8h, 12hours autonomy)
- Power (continuous):** 180 kW
- Power (peak):** 250 kW
- Weight:** 2, 3 and 4 tons.
- Charging time:** 2.5 hours
- Cooling system:** Internal air cooling system (cocooning technology)
- Dimension:** 1.2 x 1.2 x 3.2 m (HxWxL) (standard Gaussin's powerpack)
- Body:** hermetic system, Shock resistant, harsh condition proof
(-20°C/ +55°C).
- Life time:** >2 500 cycles (8 years for a 250kWh powerpack).





NATURAL GAS POWER PACK ⁽¹⁾



NATURAL GAS ENGINE

- LNG engine
- CUMMINS ISL G 250
- 186 kW @ 2 200 rpm Max. power
- 990 Nm @ 1 300 rpm Max. output torque
- Constant Speed, multiple RPM stage
- CAN bus managed engine driven by embedded software
- Hydraulic + cooling / air engine all in one system
- LNG tank capacity : 50 running hours autonomy in standard, (100 and 150 hours in option).

GAS

- Gas consumption = 4 kg/hour

ELECTRONIC & ELECTRIC

- Engine Voltage : 24 V

COMFORT

- Vibration & mechanical shock reduction with O.R.E.C. ®

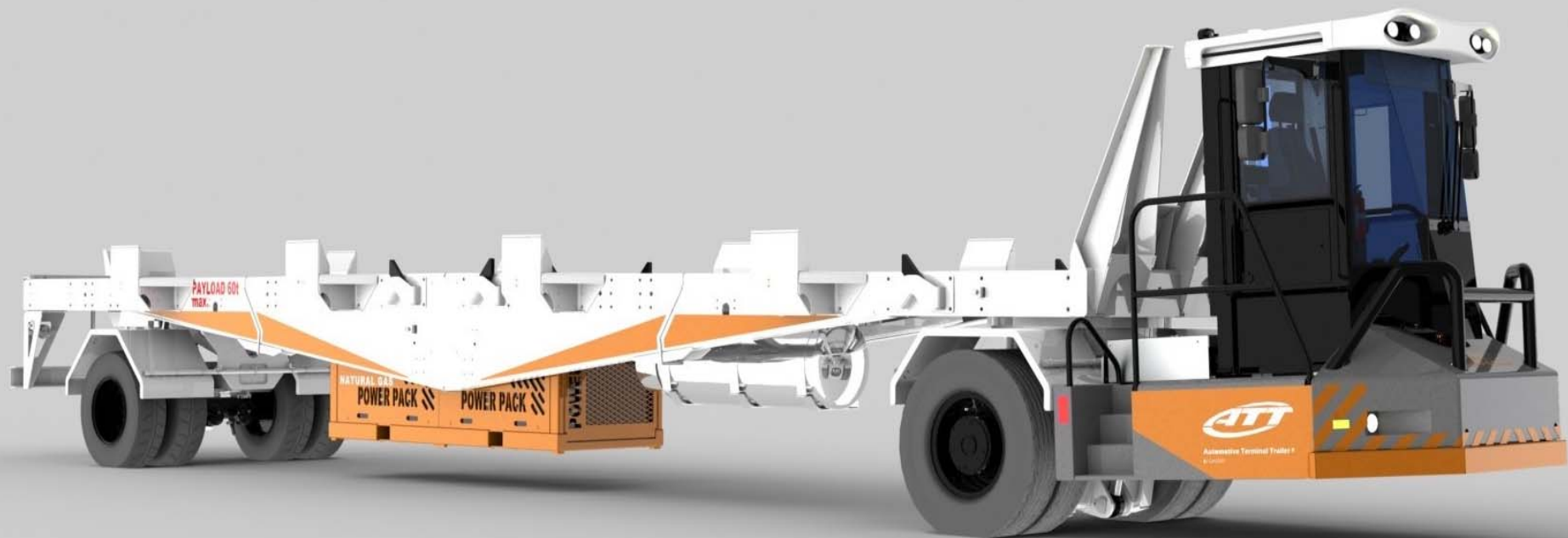


In 2013, let's move with ATT® Full Elec
Faster, safer and cleaner

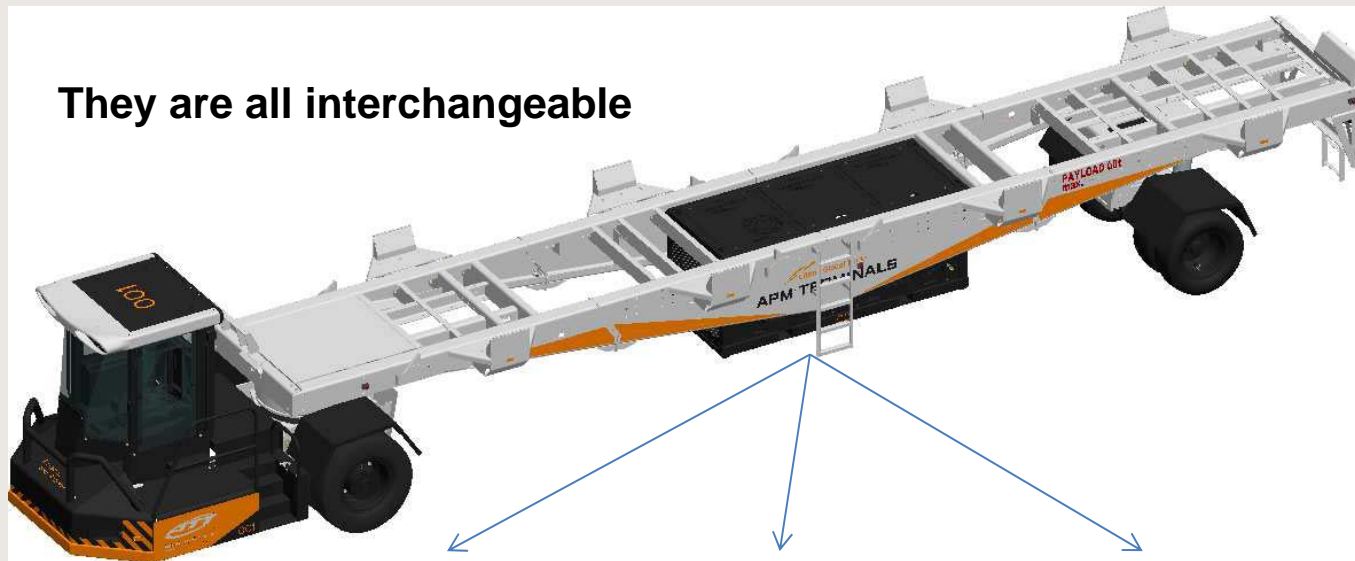


*In collaboration with Alternative Energies
and Atomic Energy Commission
for the development of PowerPack Full Elec.*





One vehicle, different types of energy:



HYBRID
(diesel electric)



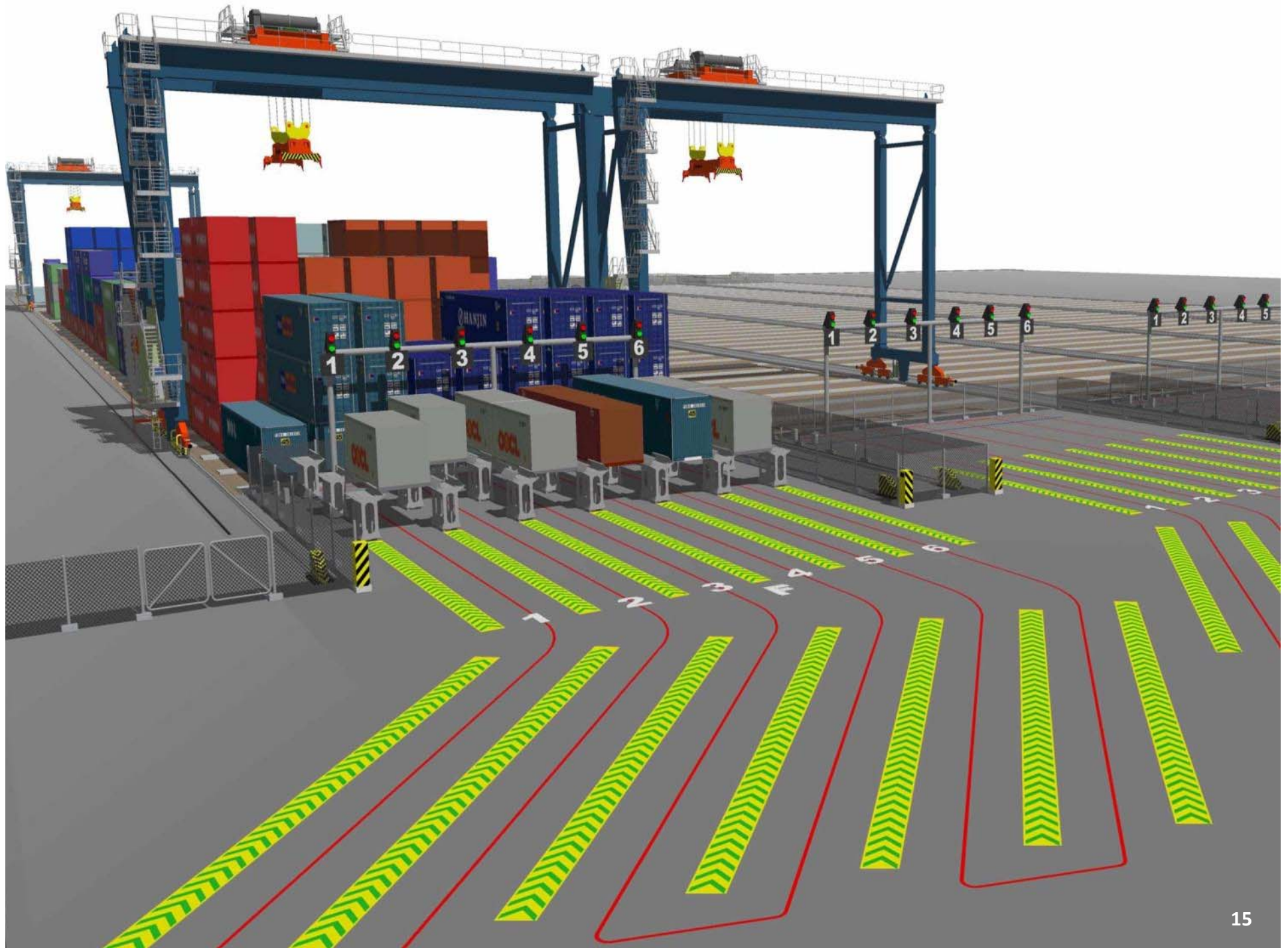
FULL ELEC
(Batterie)



HYDROGEN
(i.e. Full cell)

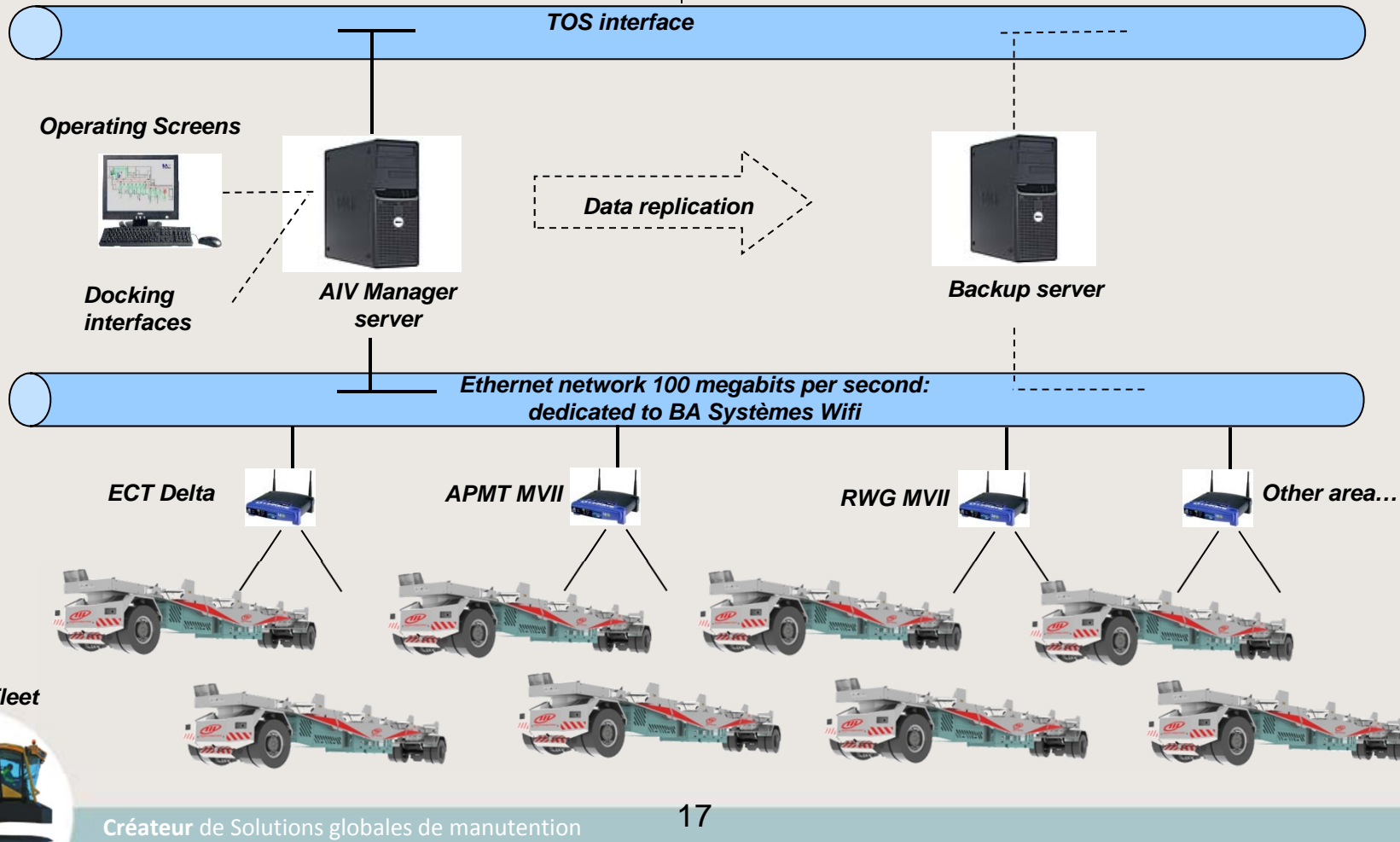






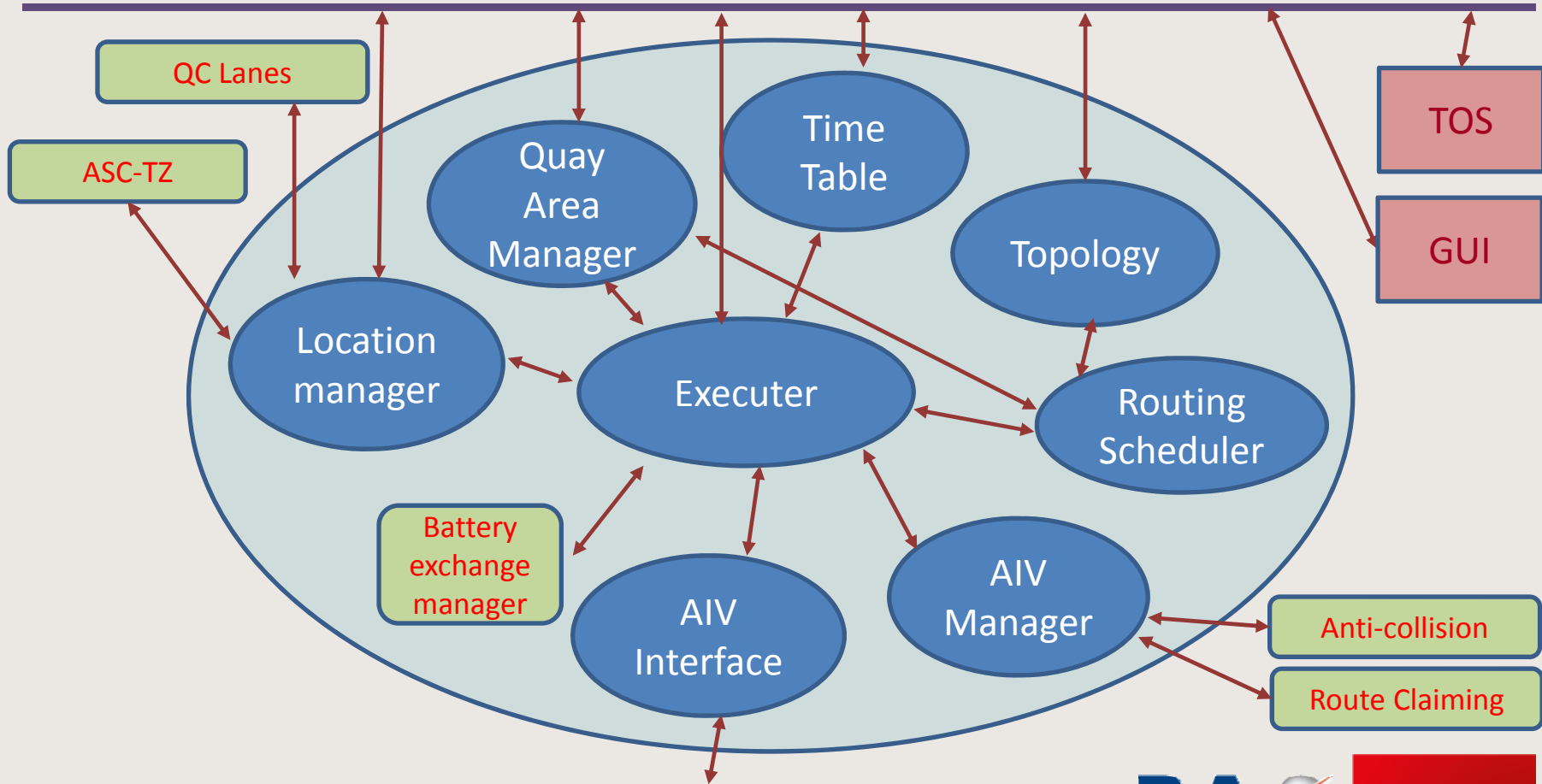


TOS





BUS system



Partners:



- ▶ **On 19 October 2012 – APM Terminals Tanger – leading operator of the Tanger Med port, confirmed the firm order for 48 ATT V3 vehicles and 51 POWERPACKS.**


- ▶ **After final tests by APM Terminals Tanger undertaken using 9 ATT V3 vehicles from October 2011 to June 2012.**

- ▶ **In addition to the 9 vehicles put at its disposal on the port to carry out the tests, the order included 39 additional ATT vehicles, with delivery planned for the first quarter 2013.**

- ▶ **May 2014**
 - **1 000 000 KM for the fleet**
 - **99 % availability ratio**
 - **32 Mover per hour**




Faster
Safer &
Cleaner™




Automotive Terminal Trailer®
By GAUSSIN

APM Terminals Tanger
move with ATT®



APM Terminals Tanger, opérateur majeur du port Tanger Med, choisit la technologie innovante ATT® pour ses opérations portuaires, en s'équipant de 48 véhicules ATT®vs et du système de motorisation associé POWERPACK®.



www.gaussin.com Valeur Nyse Alternext : FROO10342329 ALGAU

GAUSSIN MANUGISTIQUE est spécialisée dans l'étude des projets de manutention et la réalisation de systèmes sur mesure pour le mise en place et le transport de charges lourdes, volumineuses ou obèses. Avec plus de 50 000 véhicules de manutention à travers le monde, GAUSSIN Manugistique bénéficie d'une forte notoriété sur quatre marchés en pleine expansion : l'énergie, le Transport, l'Équipement et les matières premières. GAUSSIN MANUGISTIQUE® est coté sur Nyse Alternext depuis le 16 juin 2010. Les actions GAUSSIN sont cotées, depuis le 20 juillet 2012, sur le groupe de cotation E2 (Offre au public), depuis l'obtention du Visa AMF n°12-300 en date du 17/07/12 sur le Prospectus, disponible sans frais sur www.gaussin.com.

SEMIAUTOMATIC SYSTEM 50 ATT LIFT & DOCKING STATION

- ▶ **March 2013: New order for 50 ATTV4 and 50 Powerpacks signed by a leading port operator in Indonesia:**
PT PELABUHAN INDONESIA III (PERSERO)
- ▶ PELINDO III Surabaya requested driverless navigation tests on the testing grounds at Héricourt before deciding to equip its 50 ATTV4s with the LIFT and Docking Station options
<http://youtu.be/oVDCzpsPsRE>.
- ▶ This technology, developed in a partnership with the CEA, will be officially presented at the TOC fair in Rotterdam from 25 to 27 June 2013
<http://youtu.be/-xPHT1PDD7U>



ATT
 Automotive Terminal Trailer®
 By GAUSSIN

PELINDO III Indonesia moves with ATT®
Faster, Safer & Cleaner*

... PT Pelabuhan Indonesia III,
 l'un des opérateurs portuaires leaders en Indonésie,
 choisit la technologie innovante ATT®.
 Il s'équipe de 50 véhicules ATT®
 et du système de motorisation associé POWERPACK®.

GAUSSIN
 MANUGISTIQUE®

PELINDO III

www.gaussin.com

*Valueur Nysa Albarneix : ALBAU

GAUSSIN MANUGISTIQUE® est spécialisée dans l'aide, des process de manutention et la réalisation de systèmes sur roues pour la mise en place et le transport de charges lourdes, volumineuses ou collantes. Avec plus de 50 000 véhicules de manutention à travers le monde, GAUSSIN Manugistique bénéficie d'une forte réputation sur quatre continents en plein expansion : l'Europe, le Transport, l'équipement et les machines agricoles. GAUSSIN MANUGISTIQUE est coté sur Nyse Albarneix depuis le 16 juin 2011. Les actions GAUSSIN sont cotées, depuis le 20 juillet 2012, sur le groupe de cotation E2 (Dfse au public), depuis l'abandon du Visa AMF n°18-380 en date du 17/07/12 sur le Prospectus, disponible en français sur www.gaussin.com.



- A new order from AKANSEL for **40 ATT FULL ELEC** has been signed and the delivery of 20 units is planned in the second half of 2014 and 20 more units in the first half of 2015.
- After APMTT creating **reference zone on the Mediterranean and West Africa**, PELINDO opens the area of **South East Asia** where 63% of global volumes are processed and finally Akansel on the **the Middle East area**
- The Customer could add 60 units to this order by taking an option.



AKANSEL, opérateur logistique et portuaire basé en Turquie, choisit la technologie innovante ATT® pour ses opérations portuaires, et s'équipe de 40 véhicules ATT® et du système de motorisation associé POWERPACK®FULL ELEC.



GAUSSIN MANUGISTIQUE® est spécialisée dans l'état des procédés de maintenance et la réalisation de systèmes sur mesure pour la mise en place et le transport de charges lourdes, volumineuses ou délicates. Avec plus de 50 000 machines de maintenance à travers le monde, GAUSSIN Manugistique bénéficie d'une forte notoriété sur quatre continents en pleine expansion. Grâce à l'expertise et l'investissement des machines premières, GAUSSIN MANUGISTIQUE est classé sur l'Annuaire mondial depuis le 10 juin 2012. Les actions GAUSSIN sont cotées, depuis le 20 juillet 2012, sur le groupe de cotation ISE (Euronext) et, depuis l'introduction de Visa AMF n°13.003 en date du 17/07/12 sur le Prospectus, disponible sans frais sur www.gaussin.com.

*11 rue des A77 HA
70400 HÉRICOURT FRANCE
Tél. +33 (0)3 84 46 13 45
Fax +33 (0)3 84 56 78 88
Infos@gaussin.com



- The GAUSSIN Group announced the signature on 10 March 2014 of a new order for 20 ATT V4s with the German company FSH.
- Specialised in mobility services for port operators, FSH is GAUSSIN Group's licensed distributor in Germany.
- The 20 ATT-V4s will be delivered during second-half 2014 and first-half 2015.
- They will equip the port of Hamburg, largest commercial port in Germany and third-largest European port.



FSH a port & logistics operator from Turkey, has chosen the innovative ATT® technology for its port operations and equips itself with 40 ATT® vehicles and with POWERPACK®FULL ELEC, their associated motor system.





SINGAPORE BASED COMPANY



DOCK IT

PORT EQUIPMENT



Créateur de Solutions globales de manutention

**Container Terminal Horizontal Transportation Full Electricity or LNG?
Turkey and Black Sea Ports are aiming to use alternative energies**

**ATT - AIV range offers proven competitive benefits
SAFETY – CO2 reductions – 99 % availability
OPEX and CAPEX cost reduction**

**A production model based on standardization of VEHICLE
& POWER PACK to reduce costs by economy of scales and
increase reliability by reduction of components numbers**

**Advance technologies with the CEA to go for
AUTOMATION Objective : Increase number of moves and
decrease the CO2 emission and noise .**



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**THE INNOVATIVE GAUSSIN TERMINAL EQUIPMENT IS
TODAY READY WITH BOTH ALTERNATIVE ENERGIES**



THANK YOU ! SEE YOU SOON



G A U S S I N

M A N U G I S T I Q U E ®

