



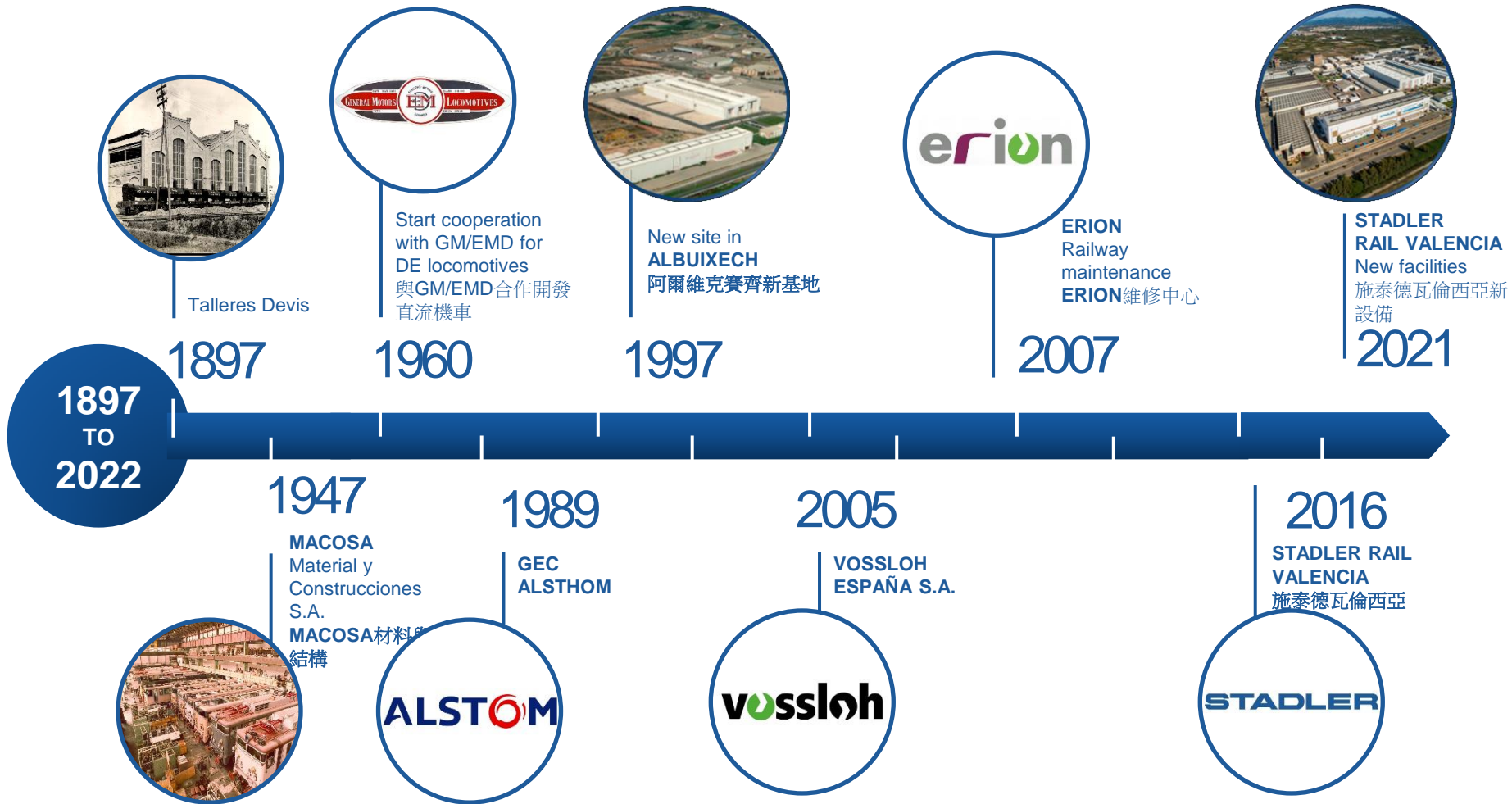
STADLER

STADLER RAIL VALENCIA施泰德瓦倫西亞
VISIT OF TRA DELEGATION TRA代表團參訪

Giovanni Monni, September 28th 2022

STADLER

HISTORY OF STAV 施泰德瓦倫西亞沿革



More than a century of experience in railway business...

HISTORY OF STAV 施泰德瓦倫西亞沿革



1 EURO4000
1st Contract signed
簽署第一份EURO4000合約

2006



EURODUAL DE
1st Contract signed
第一份EURODUAL DE 合約

2017



1 EURO6000
1st Contract Signed (March)
第一份EURO6000 合約, 西班牙(3月)

2019



EURO9000
1^o contract signed (May)
第一份EURO9000合約(5月)

2019



EURO4001
1st order in LATAM (Uruguay)
第一份EURO4004合約 烏拉圭(LATAM)

2020



CLASS93
1st Tri-mode contract Signed
第一份 CLASS93 Tri-mode 合約

2021



CLASS99
1st contract Signed
第一份 CLASS99 合約

2022

2006 TO 2022

2010
EUROLIGHT
1st Contract signed
簽署第一份EUROLIGHT 合約



2013
Bi-mode loco
1st order
第一份雙層客車 訂單



2018
EURO4001 & EURODUAL FRBE
1st Contract signed
第一份EURO4001 & EURODUAL FRBE 合約



2019
CENTRAL CAB
Order for Finland (April)
來自芬蘭 CENTRAL CAB 訂單(4月)



2019
TAIWAN
1st Contract APAC
來自臺灣第一份訂單



100 EuroDual family ordered

2021
New Zealand
1st contract signed in New Zealand
紐西蘭第一份訂單



200 EuroDual family ordered

...putting visionary solutions on track

STADLER VALENCIA 施泰德瓦倫西亞 INDUSTRIAL FACILITY 工業廠區

**BOGIES
WORKSHOP**
轉向架工場

**VEHICLE
WORKSHOP**
車輛工場

**TESTING AND
COMMISSIONING**
測試與試運轉

MAIN OFFICES
主辦公室

STADLER VALENCIA 施泰德瓦倫西亞 PRODUCTS AND SERVICES 產品與服務



Locomotives 機車



Passenger rail vehicles 客車



Bogies 轉向架



Service 服務

Stadler gets things moving. 施泰德使一切運轉

FOR THE CITY AND SUBURBS 城市與郊區

CITYLINK AND TRAMLINK LRV

城際列車與路面電車輕軌



TRAIN-TRAM / LRV 通勤輕軌/輕軌

CITYLINK: One vehicle for two systems

城市鏈結:一輛車使用於兩個系統



- **European leader in tram-trains** with +650 units sold and references in Spain, Germany, Austria, Great Britain, Hungary and Mexico.
- 通勤輕軌的歐洲領導者，在西班牙、德國、奧地利、英國、匈牙利和墨西哥銷售了超過 650 輛。
- **Comfort up to 100km/h:** Compact turning bogie with secondary pneumatic suspension and wheels with diameter up to 720 mm.
- 舒適性高達 100 公里/小時：具二次懸吊(空氣彈簧)之緊湊型轉向架，和直徑高達 720 毫米的車輪。
- **Safety:** Compliance with Crash regulations (EN 15227, Category CIII) and approvals according to different standards (EBA, BOSTRAB, GM/RT)
- 安全性：符合碰撞規定（EN 15227，CIII）和不同標準（EBA、BOSTRAB、GM/RT）之核可
- **Accessibility:** low floor from back to front doors with very smooth gentle longitudinal ramps and up to 10 wide double doors, possible in different heights
- 無障礙：從後門到前門的低地板，帶有非常平滑的緩和縱向坡道和多達 10 個雙寬門，且具有不同的高度
- **Energy supply:** Electric (E), Dual (E/E), Diesel (DE) and bi-mode(DE/E) variants
- 能源供應：電 (E)、柴電 (E/E)、柴油 (DE) 和雙模式 (DE/E) 變量

CITYLINK LRV城際列車 輕軌

UNITS SOLD (SELECTED EXAMPLES)

已銷售車輛(範例)



15 Trains for FGV Alicante, Spain
西班牙FGV-列車



75 LRVs for VBK & AVG Karlsruhe, Germany
德國卡爾斯魯厄VKB & AVG -列車



6 Trains for SFM Mallorca, Spain
西班牙馬略卡SFM-列車



12 Tram-Trains for VMS Chemnitz, Germany
德國開姆尼茨VMS -列車



2 Trains for Puebla, Mexico
墨西哥普埃布拉-列車



12 Tram-trains for MAV, Szeged, Hungary
匈牙利賽格德MAV-通席輕軌



7 Tram-Trains for SYPTE, UK
英國SYPTE-通勤輕軌



36 Trains for W&B, UK
英國W&B-列車



504 Trains for VDV (6 operators), D+AT
德國與地利VDV-列車 (6款運營)

Sales success: **+650** vehicles sold in 6 countries

成功銷售: 於6國銷售超過650輛

CITYLINK UNIVERSAL

環球城市鏈結

VDV LRV

VDV 輕軌

BIGGEST LRV
CONTRACT EVER IN
EUROPE

6 Customers 6名客戶

2 Homologations in **2** Countries; 於2個國家獲得2項認證

8 Vehicle variants in the same family (750Vdc & 15kV 16⅔Hz)
同一系列車輛具 8 種車輛組合 (750Vdc 和 15kV 16⅔Hz)

246 Vehicles base contract 246輛車合約

504 Up to vehicles including options 超過504輛車包含方案

18 +8 +8 Maintenance contract 18+8+8維修合約



TRAMWAY 輕軌電車

TRAMLINK: Ride comfort 輕軌電車: 舒適搭乘



- 100% low-floor multi-articulated tram with an innovative bogie with real axles
- 100% 低底盤多關節式路面電車，創新之車軸轉向架
- Big diameter wheels (up to 600 mm)
- 大直徑車輪（最大值達 600 mm）
- The best dynamic and comfort regarding equivalent vehicles even in narrow curves.
- 即使行駛於狹窄的彎道上，也能提供與同等車輛相比之最佳動態與舒適性。
- Maximum seating capacity over the bogie (up to 16) without ramps and steps.
- 轉向架上之最大座位容量（多達 16 個），不含坡道和台階。
- Maintenance free structure and according to all the collision requirements (duplex steel)
- 免維護結構並依據碰撞需求（雙相鋼）
- Free-catenary available
- 可行駛於無架空線

TRAMLINK輕軌電車

UNITS SOLD (SELECTED EXAMPLES)

已銷售車輛(範例)



8

Trams for AVA, CH
瑞士AVA-輕軌電車



13

LRV for RSAG Rostock, DE
德國羅斯托克RSAG-輕軌



9

LRV for FLP, Lugano, CH
盧加諾FLP-輕軌



60

Trams for ATM, Milan, IT
義大利米蘭ATM-輕軌電車



14

Trams para EVAG, Erfurt, Alemania
德國埃爾福特EVAG-輕軌電車



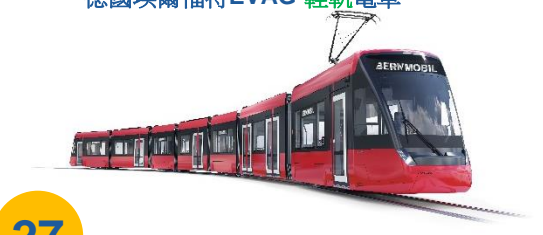
22

LRV for EMTU Santos, Brazil
巴西桑托斯EMTU-輕軌



15

Trams for SWA, Augsburg, DE
德國奧德斯堡SWA-輕軌電車



27

Trams for Bernmobil, Berna, CH
瑞士伯恩Bernmobil-輕軌電車



11

LRV for Stern & Hafferl Gmunden, AT
奧地利格蒙登Stern & Hafferl-輕軌

Sales succes: 223 units sold in 6 countries

成功銷售: 於6國銷售223輛列車



STADLER'S LOCOMOTIVES PORTFOLIO

施泰德機車產品集

UNPAIRED PERFORMANCE

無與倫比的性能

STADLER

EXPERIENCE IN LOCOMOTIVES 機車之經驗

STADLER RAIL VALENCIA 施泰德瓦倫西亞

Stadler's group center of competence for the Locomotive business

施泰德集團之機車業務能力中心



More than a century of experience putting visionary solutions on track
以**超過一個世紀以上經驗**,將有遠見的方案用於鐵道產業

EXPERIENCE IN LOCOMOTIVES 機車之經驗

A SUCCESSFULL HISTORY 成功之沿革



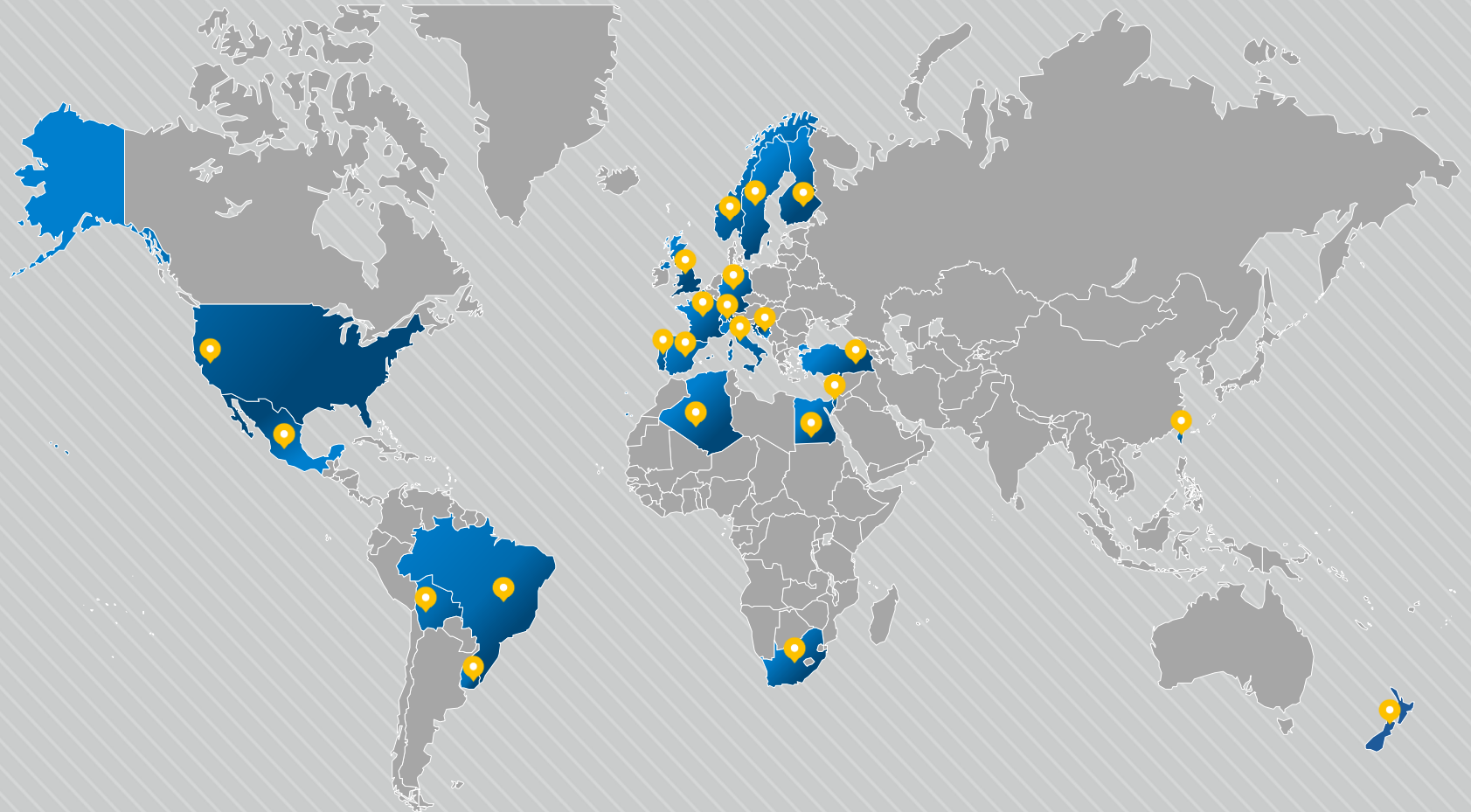
- European leader supplier of **diesel-electric mainline** locomotives
- 歐洲具領導地位之柴電機車供應商
- European leader supplier of **Co'Co'** locomotives
- 歐洲具領導地位之柴電機車(Co'Co')供應商
- Worldwide pioneer suppliers in **powerful dual-mode** locomotives
- 極具動力之的雙模式機車的全球供應商先驅
- Wide experience in **narrow gauge** and **low axle-load** locomotives
- 於窄軌和低軸重機車方面具有豐富經驗
- Enriching technological solutions with **1st class suppliers** (EMD, CAT, MTU, Cummins, ABB, VEM, KB, ...)
- 與一流供應商一同研究技術解決方案 (EMD、CAT、MTU、康明斯、ABB、VEM、KB.....)



EXPERIENCE IN LOCOMOTIVES 機車之經驗

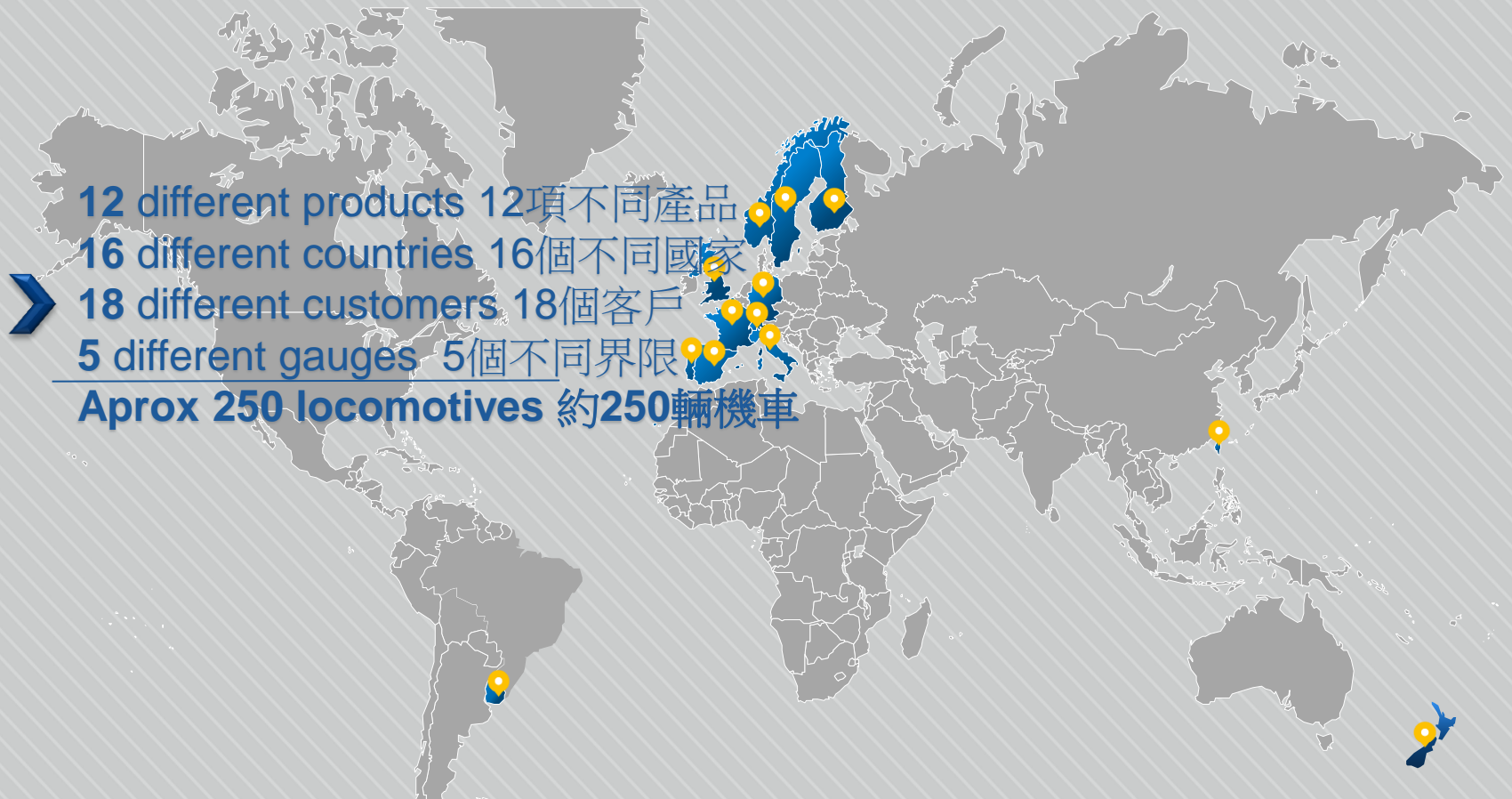
+2,500 UNITS OVER 5 CONTINENTS

於5國銷售餘2500輛機車



STAV LOCOMOTIVES 施泰德瓦倫西亞之機車

CURRENT MANUFACTURING 當前製造



Unique opportunity to see the market trends of locomotive in ONE site

於一個基地了解機車市場之趨勢的獨特機會

HIGHLIGHTS 產品亮點

PASSENGER SERVICE : HIGH-SPEED MAINLINE LOCOMOTIVES

乘客服務: 高速正線機車



F125, 2018, Metrolink (USA)



Class 67, 1999, EWS (UK)
In use for the Royal train



S334, 2008, Renfe (Spain)



EURO3200, 2014, Israel Railways (ISR)

Maximum service speed up to 200 km/h
最高行進速度可達 200 公里/小時

HIGHLIGHTS 亮點

UNIVERSAL SERVICE: CLASS 68 - HIGH PERFORMANCE AND RELIABLE
UNIVERSAL LOCS

通用服務：CLASS 68 - 高性能和可靠之通用機車



- Able for rail **freight** transport: 4-axle locomotive working as a 6-axle locomotive
- 可用於鐵路貨運：4軸機車兼作6軸機車
- ... and for **passenger** traffic: passenger trains running up to 160 km/h
-對於客運：行駛速度高達 160 公里/小時之客車

Same locomotive, two uses

一輛機車,兩種用途

HIGHLIGHTS 產品亮點

HEAVY HAUL SERVICE: THE LONGEST TRAIN IN EUROPE
重型運輸服務：歐洲最長的火車



1524 m- long and 4020 ton 1524 米長, 4020 噸
two EURO4000 locomotives, one driver 兩輛EURO4000機車，一名司機

HIGHLIGHTS 產品亮點

CHALLENGING OPERATIONS: DESIGNED FOR EXTREME WEATHER CONDITIONS

具挑戰性之運營：專門為極端氣候條件而設計



EURO4000 for Cargo net in Norway 挪威的EURO4000貨物運輸
Operations in severe climatic conditions: **-40 °C** 於惡劣氣候條件下運營：**-40 °C**

HIGHLIGHTS 產品亮點

CHALLENGING OPERATIONS: DESIGNED FOR UNUSUAL OPERATING CONDITIONS

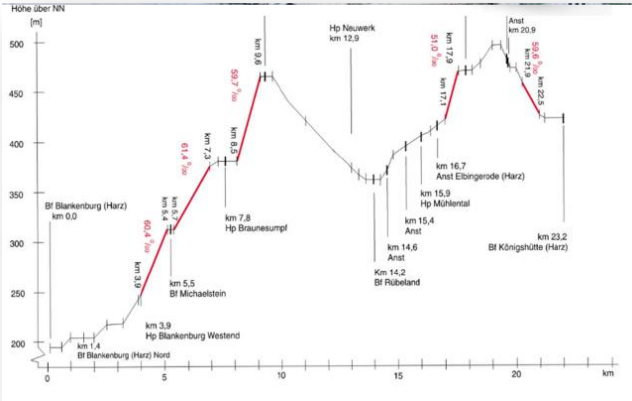
具挑戰性之運營：專為特殊運營條件而設計



SALi for FCA in Bolivia 玻利維亞 FCA 的 SALi
Operations at an altitude up to 5,000 m 於海拔高達 5,000 m 高度作業

HIGHLIGHTS 產品亮點

CHALLENGING OPERATIONS: HAULING TRAINS ON HIGH SLOPES 具挑戰性之運營：於高斜度高坡度進行火車牽引

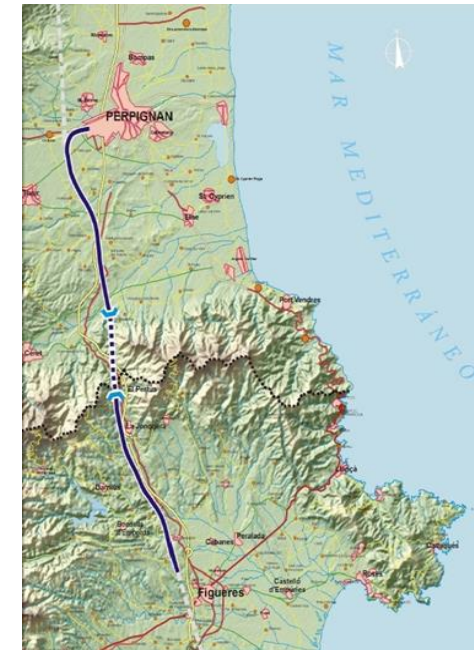


1. HVLE (Germany) Locomotive in the Rübelandbahn(德國)Rübelandbahn的HVLE機車
Operations on up to 64‰ ramps於高達 64‰ 的坡道上行駛

HIGHLIGHTS 產品亮點

CHALLENGING OPERATIONS: HAULING TRAINS ON HIGH SLOPES

具挑戰性之運營：於高斜度高坡度進行火車牽引



- Route length: over 50 km, 9 km in tunnel.
- 路線長度：50多公里，隧道9公里。
- Ramps of up to 18‰
- 坡道高達 18‰
- Required minimum speed: 100km/h
- 最低速度需求：100km/h

2. >2,000 tons trains to cross the Spain-France border 超過 2,000 噸的火車穿越西班牙-法國邊境
hailed by one single locomotive 由一輛機車進行牽引



LOCOMOTIVE PORTFOLIO

機車產品集

STADLER

LOCOMOTIVE PORTFOLIO 機車產品集

6 AXLE LOCOMOTIVES 6軸機車

Standard and wide gauge 標準界限和寬界限	EURODUAL	Dual Mode 雙模式	≤ 160 km/h	 
	EURO4001	Diesel-electric 柴電		
	EURO6000	Electric MS 電力多系統		
	EURO9000	Electric MS / Dual / Tri-mode 電力多系統/雙模式/三重模式		
	Class 99			
Narrow gauge and low axle-load 窄軌距和低軸重	SALi	Diesel-electric / Dual 柴電/雙模式	≤ 120 km/h	 
	ASIALight	Diesel-electric / Dual 柴電/雙模式		

4 AXLE LOCOMOTIVES 4軸機車

Universal mainline locomotives 通用正線機車	EURO/ UKLight	Diesel-electric 柴電	≤ 160 km/h	 
	UKDUAL	Electric / Dual 電力/雙模式 Tri-mode (E + D+ Batt) 三重模式(電力+柴油+電池)	≤ 180 km/h	
	Class 93			
High-speed main-track locomotives and power-cars 高速正線機車和動力車	EURO3000	Diesel-electric / Dual 柴電/雙模式	≤ 200 km/h	 
	F125			
Central cab and shunting locomotives 中央駕駛室和調車機車	NG shunting	Diesel-electric / Dual / Electric/ Batteries 柴電/雙模式/電力/電池	≤ 120 km/h	 
	Others			

TAYLOR-MADE LOCOMOTIVES (rack-and-pinion locomotives and adhesion) 訂製機車(齒輪齒條機車與附著力)

Small Shunting locomotives /
Special vehicles
小型調車機車 /
特種車輛



6-AXLE LOCOMOTIVES 6軸機車



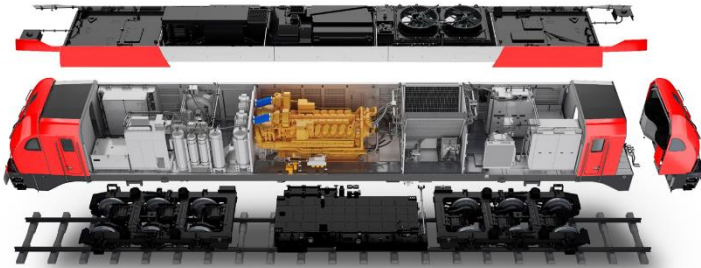
Visit of TRA | G. Momi | © Stadler | 28.09.2023



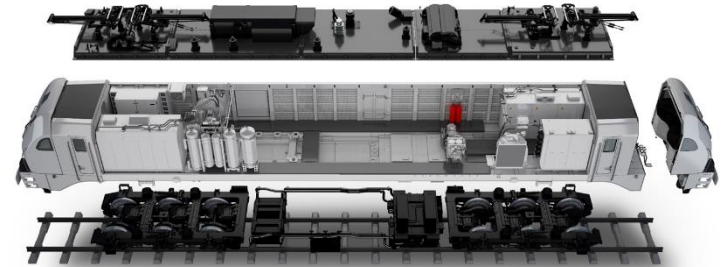
6-AXLE LOCOMOTIVES 6軸機車

MODULAR DESIGN: DESIGNED AS A FAMILY

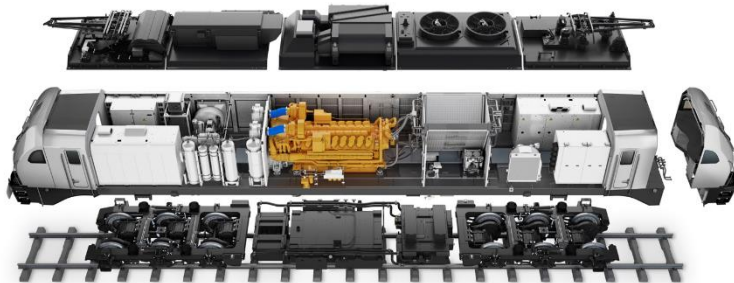
模組設計:家族式設計



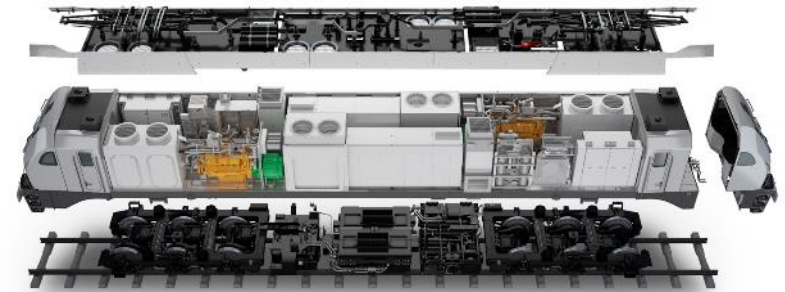
DIESEL-EURO4001
柴油-EURO4001



ELECTRIC-EURO6000
電力-EURO6000



HYBRID-EURODUAL
油電混合-EURODUAL



HYBRID-EURO9000
油電混合-EURO9000

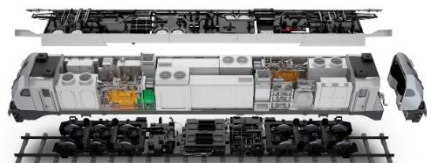
Same vehicle with different configurations 同一輛車具有不同的配置

6-AXLE LOCOMOTIVES 6軸機車

EURO9000 PLATFORM EURO9000平台

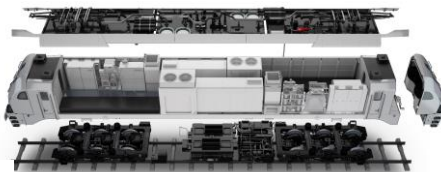


- Service proven components developed by Stadler for previous locomotive models
- 施泰德可為機車開發經驗證的零組件
- Designed to run on main European rail corridors
- 專為在歐洲主要鐵路上之運行而設計
 - Cross border operations, with ETCS and various country: DE, AT, CH, IT, BE, NL
 - 跨境運營，與 ETCS 和多個國家/地區：德國、奧地利、瑞士、義大利、比利時、荷蘭
- Multipurpose locomotive for freight, passenger and rescue applications
- 用於貨運、客運和救援應用的多用途機車
- High performance multi-system electric locomotive (15/25 kV AC + 1.5/3 KV DC): **up to 9 MW**
- 高性能多系統電力機車（15/25 kV AC + 1.5/3 KV DC）：**高達 9 MW**
 - Optional: Up to 2x950 kW CAT C32 Stage V diesel engines
 - 選項：高達 2x950 kW CAT C32 Stage V 柴油引擎
- High starting and continuous tractive effort up to **500 kN**
- **高達 500 kN** 之高啟動及持續牽引力
- 6-axle, AC traction system with IGBT, one inverter per axle for improved adhesion
- 具IGBT 的 6 軸交流牽引系統，每軸一個變流器以提高附著力
- Extremely **low track forces** (best non-self steering bogie)
- 極低的**軌道力**（最佳的**非自導式**轉向架）
- Monocoque structure made of carbon steel, high strength steel and oxidation-resistant steel
- 由碳鋼、高強度鋼和**耐候鋼**製成的**單體式**結構
- Two ergonomically designed driver's cabs with HVAC system. Full cab isolation
- 兩端附有 HVAC 系統並符合人體工學設計之駕駛室。**其為獨立駕駛室**
- TSI LOC&PAS 2014 compliant
- 符合 TSI LOC&PAS 2014



Hybrid electric & diesel
柴電混合

Pure electric
純電力



Flexibility configuration
(e.g. battery powered)

彈性配置
例如：電池電力

6-AXLE LOCOMOTIVES 6軸機車

CLASS 99



- **2-mode 6-axle locomotive** based on UKDual/EURODual
- 基於UKDual/EURODual的雙模式6軸機車
- **ELECTRIC TRACTION** 電力牽引
 - 25 kV AC
 - 25 kV 交流電
 - Rail power: 6 MW
 - 動力輸出：6 MW
- **DIESEL TRACTION** 柴油牽引
 - Cummins QSK50, stage V
 - 康明斯 QSK50，stage V
 - Diesel engine power: ~1800 kW
 - 柴油引擎功率：~1800 kW
- For Freight Services 貨車營運
 - Prepared for passenger service (HEP).
 - 客車輔助供電(HEP)。
- TSI & GM / RT (UK Standards) compliant loc.
- 符合 TSI 和 GM / RT (英國標準)。
- Starting TE : up to 500 kN 啟動牽引力：高達 500 kN
- < 19 tons/axle < 19 噸/軸
- UK clearance. 英國車輛界限
- Maximum Speed: 120 km/h (110 mph)
- 最高速度：120 公里/小時 (110 英里/小時)
 - Prepared for 160 km/h 最高可達 160 公里/小時

6-AXLE LOCOMOTIVES 6軸機車

TRACK-RECORD 實績

COUNTRY CONFIGURATION 國家配置	CLASS 99	EURO9000	EURO4001 DIESEL	EURO6000 ELECTRIC MS	EURODUAL	In-service date 營運日期
FR / BEL 法國/比利時			12			2020
ES (IB) 西班牙(IB), ES/ FR/ Lux (UIC) 西班牙/法國/盧森堡(UIC)				47		End-2021
SE / NO 瑞典/挪威					7	2020
DE 德國					23	2020
FR / BE 法國/比利時					1	2019
DE / AT 德國/奧地利					58	(AT-2021)
Turkey 土耳其					7	2022
DE/AT/CH/IT/NL/BE 德國/奧地利/荷蘭/比利時		20				2023
Uruguay 烏拉圭			7			2023
ES / PT 西班牙/葡萄牙				16		2023
UK 英國	30					2025
TOTAL 總數	30	20	19	63	96	228

Solid experience on track! 穩紮穩打的軌道經驗!

4-AXLE LOCOMOTIVES 4軸機車



4-AXLE LOCOMOTIVES 4軸機車

EUROLIGHT PLATFORM EUROLIGHT月台



UKLight / Class 68

- In operation since 2014
- 自2014年開始運營
- Multipurpose locomotive for freight, passenger and rescue applications

用於貨車、客車和救援用之多用途機車

Powerful and light 極具動力與輕量化

- CAT C175 St. V Diesel Engine – 2.8 MW
- CAT C175 St. V 柴油引擎 – 2.8 MW
- 20 tons/axle
- 20噸/軸
- Max. speed of 160 km/h
- 速度高達 160公里/小時的速度
- Considerable starting and continuous tractive effort up to 320 Kn
- 啟動與持續牽引力高達 320 kN
- AC traction system with IGBT, one inverter per axle for improved adhesion
- 具 IGBT 的交流牽引系統，每個車軸一個變流器以提高附著力
- Monocoque structure made of carbon steel, high strength steel and oxidation-resistant steel
- 由碳鋼、高強度鋼和抗氧化鋼製成的硬殼結構
- Two ergonomically designed driver's cabs with HVAC system. Full cab isolation
- 兩端附有 HVAC 系統並符合人體工學設計的駕駛室。其為獨立駕駛室
- TSI LOC&PAS 2014 & EC 26/2004 Stage V compliant
- 符合 TSI LOC&PAS 2014 和 EC 26/2004 Stage V 標準



EUROLight



4-AXLE LOCOMOTIVES 4軸機車

UKDUAL LOCOMOTIVE (CLASS 88) UKDUAL機車(CLASS 88)



- In operation since year 2017.
- 自2014年開始運營
- Bi-mode 4-axle locomotive based on UKLight
- 以UKLight為基礎之雙模式4軸機車
- **ELECTRIC TRACTION** 電力牽引
 - Catenary voltage : 25 kV
 - 電車線電壓：25 kV
 - Rail power : 4 MW
 - 動力輸出：4 MW
 - Rheostatic brake and regenerative brake
 - 電阻電軔和再生電軔
- **DIESEL TRACTION** 柴油牽引
 - Diesel engine power : 708 kW
 - 柴油引擎功率：708 kW
 - Fuel tank : 1800 l
 - 油箱：1800升
- For Passenger and Freight Services (HEP included).
- 用於客車和貨車運行（包含客車輔助供電）。
- UK compliant carbody.
- 符合英國標準的車體。
- TSI & GM / RT (UK Standards) compliant loc.
- 符合 TSI 和 GM / RT（英國標準）。
- Starting TE : up to 332 kN
- 啟動牽引力：高達 332 kN
- Maximum speed: 160 km/h (100 mph)
- 最高速度：160 公里/小時（100 英里/小時）

4-AXLE LOCOMOTIVES 4軸機車

CLASS 93



- 3-mode 4-axle locomotive based on UKDual (Class88)
- 基於UKDual (Class88) 的三模式 四軸機車
- **ELECTRIC TRACTION 電力牽引**
 - 25 kV AC
 - 25 kV 交流電
 - Rail power: 4 MW
 - 動力輸出：4 MW
- **DIESEL TRACTION 柴油牽引**
 - CAT C32, stage V
 - Diesel engine power: 900 kW
 - 柴油引擎功率：900千瓦
- **TRACTION BATTERIES 電池牽引**
 - 2x Lithium Titanate Oxide (LTO)
 - 2x 鈦酸鋰氧化物 (LTO)
 - Up to 400 kW
 - 高達 400 千瓦
- For Passenger and Freight Services (HEP included).
- 用於客車和貨車運行（包含輔助供電）。
- UK clearance.
- 英國車輛界限
- TSI & GM / RT (UK Standards) compliant loc.
- 符合 TSI 和 GM / RT（英國標準）
- Starting TE : up to 290 kN
- 啟動牽引力：高達 290 kN
- Maximum Speed: 177 km/h (110 mph)
- 最高速度：177 公里/小時（110 英里/小時）

4-AXLE LOCOMOTIVES 4軸機車

TRACK-RECORD (NOV. 2021) 實績(2021年11月)

LOCOMOTIVE MODEL 機車型式	Country 國家	Number of units 數量	In-service date 營運日期
UKLight / Class 68	UK	34	2014
EUROLight	Italy	1	2016
EUROLight	Spain	22	2022
UKDual / Class 88	UK	10	2017
Class 93	UK	10	2024
TOTAL總數		77	

Solid experience on track! 穩紮穩打的軌道經驗!

NARROW GAUGE LOW-WEIGHT LOCOS

窄軌輕型機車



NARROW GAUGE LOW-AXLE LOCOS 窄軌低軸重機車

SALi



- 6-axle low-weight diesel-electric locomotive for operations in narrow gauge networks.
- 用於在窄軌路網中運行的 6 軸輕型柴油電力機車。
- Based on proven models such as the EURO4000 and UKLIGHT.
- 基於驗證過之機車，例如 EURO4000 和 UKLIGHT。
- Freight applications
- 貨車應用
- Designed for harsh operational conditions
- 專為惡劣操作條件而設計
 - high altitude (over 5,000 m above sea level)
 - 高海拔（海拔 5,000 米以上）
 - Hot & Humid environment 炎熱與潮溼的環境
- EU Stage V compliant prime mover available
- 提供符合歐盟 Stage V 標準的引擎
- AC traction system with IGBT 具 IGBT 的交流牽引系統
- High performance: 2500 - 2700 BHP (1865 - 2014 kW)
- 高性能：2500 - 2700 BHP (1865 - 2014 kW)
- Variable weight: 16-20 t/axle 可變重量：16-20 t/軸
- Speed: up to 120 km/h 速度：最高 120 公里/小時
- Two acoustic and heat-insulated driver's cabs with air conditioning
- 兩端附空調之隔音隔熱駕駛室

NARROW GAUGE LOW-AXLE LOCOS 窄軌低軸重機車

Dual-mode locomotive 雙模式機車



- 6-axle low-weight diesel-electric locomotive for operations in narrow gauge networks.
- 用於在窄軌路網中運行的 6 軸輕型柴油電力機車。
- Based on proven models such as the EURO4000 and UKDual.
- 基於驗證過之機車，例如 EURO4000 和 UKDual
- Freight applications
- 貨車應用
- For operation on electrified and non-electrified lines:
- 用於電氣和非電氣路線之運轉:
 - E: 2.000 kW
 - 電力: 2.000 kW
 - D: 950 kW (CAT C32 prime mover)
 - 柴油：950 kW (CAT C32 原動機)
- **EU Stage V** compliant prime mover available
- 提供符合歐盟 Stage V 標準的引擎
- AC traction system with IGBT
- 具 IGBT 的交流牽引系統
- Variable weight: **16-20 t/axle**
- 可變重量：16-20 t/軸
- Speed: up to **80 km/h**
- 速度：最高 80 公里/小時

NARROW GAUGE LOW-AXLE LOCOS 窄軌低軸重機車

KiwiRail locomotive 紐西蘭鐵路機車



- 6-axle low-weight diesel-electric locomotive for operations in narrow gauge networks (1.068 mm).
- 用於在窄軌之路網 (1.068 mm) 中運行的 6 軸輕型柴油電力機車。
- Based on proven models such as the EURO4000, UKLIGHT and SALi.
- 基於驗證過之機車，例如 EURO4000、UKLIGHT 和 SALi。
- Freight & passenger applications 貨車和客車應用
 - For multiple-unit operation (up to 6)
用於多單元操作 (最多 6 個)
- EU Stage V compliant prime mover available
- 提供符合歐盟 Stage V 標準的引擎
- AC/AC traction system with IGBT
- 具 IGBT 的交流/交流牽引系統
- High performance: 3000 kW 高性能：3000 千瓦
- Weight: 18 t/axle 重量：18 噸/軸
- Speed: up to 100 km/h 速度：最高100公里/小時
- Two acoustic and heat-insulated driver's cabs with air conditioning
- 兩端附空調之隔音隔熱駕駛室
- Monocoque carbody, narrow hood with external corridors
- 單體式車體結構，具外部走道的蓋板
- Prepared for ETCS installation
- 已做好安裝 ETCS 的準備

SHUNTING AND LIGHT-TRAIN OPERATIONS

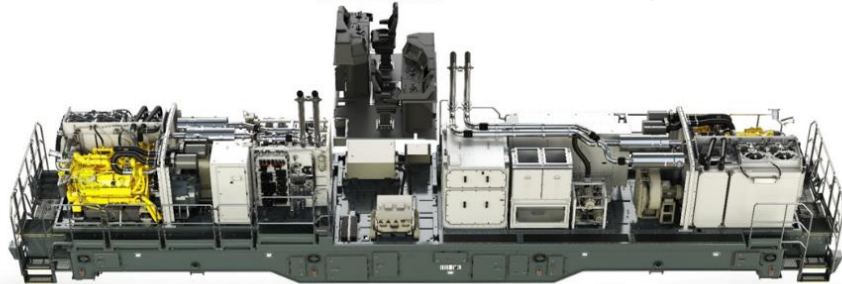
調車和輕量列車運行



SHUNTING AND LIGHT-TRAIN LOCOS 調車與輕量機車

VR FINLAND 芬蘭VR

DIESEL: twin engine 柴油:雙引擎

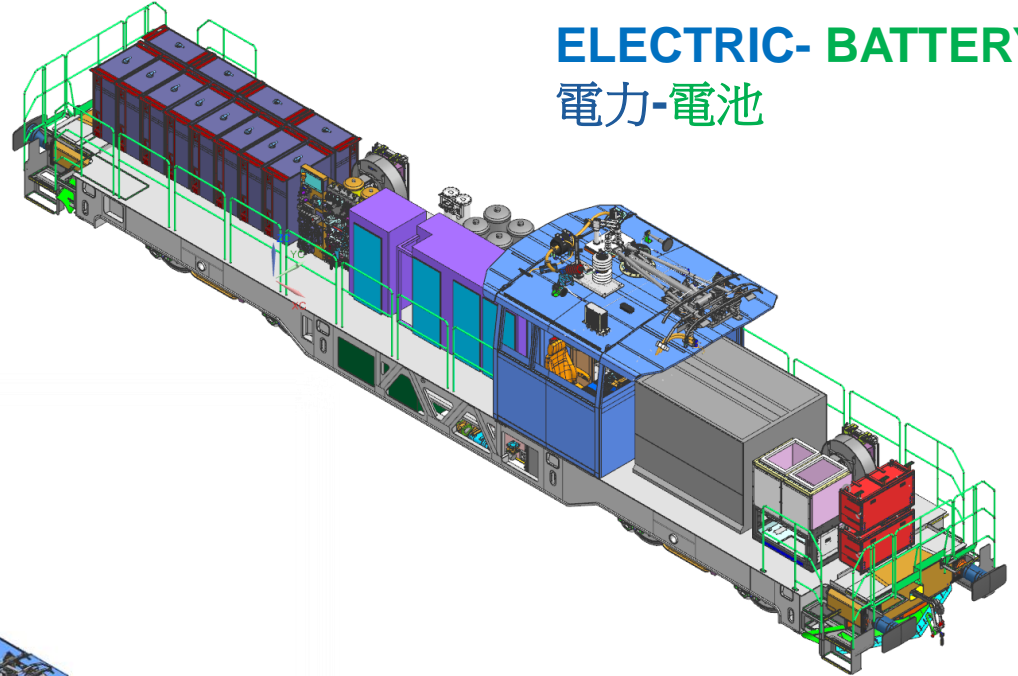


- Multipurpose locomotive for freight and passenger applications
- 用於貨車和客車應用的多用途機車
- High performances 高性能
 - 2 x CAT C32 St. V Diesel Engine – 1,9 MW
 - 2 x CAT C32 St. V 柴油引擎 – 1,9 MW
- High starting and continuous tractive effort up to **320 kN**
- 高達 **320 kN** 的高啟動力和持續牽引力
- Maximum Speed: **120 km/h**
- 最高速度：**120公里/小時**
- 4-axle, AC traction system with IGBT, one inverter per axle for improved adhesion
- 4 軸交流牽引系統，具 IGBT，每軸一個變流器，以提高附著力
- Extremely **low weight transfer** (traction rod)
- 極低的重量轉移（牽引桿）
- Central ergonomically designed driver's cab with HVAC system. Full cab isolation
- 附 HVAC 系統的中央符合人體工學設計的駕駛室。其為獨立駕駛室
- TSI LOC&PAS 2014 & EC 26/2004 Stage V compliant
- 符合 TSI LOC&PAS 2014 和 EC 26/2004 Stage 5 標準
- Designed for extreme low temperatures and winter conditions (-40 °C)
- 專為極端低溫與冬季條件（-40 °C）而設計

SHUNTING AND LIGHT-TRAIN LOCOS 調車與輕量機車

MULTIPLE CONFIGURATION AVAILABLE 多種配置

ELECTRIC- BATTERY
電力-電池



ELECTRIC- DIESEL

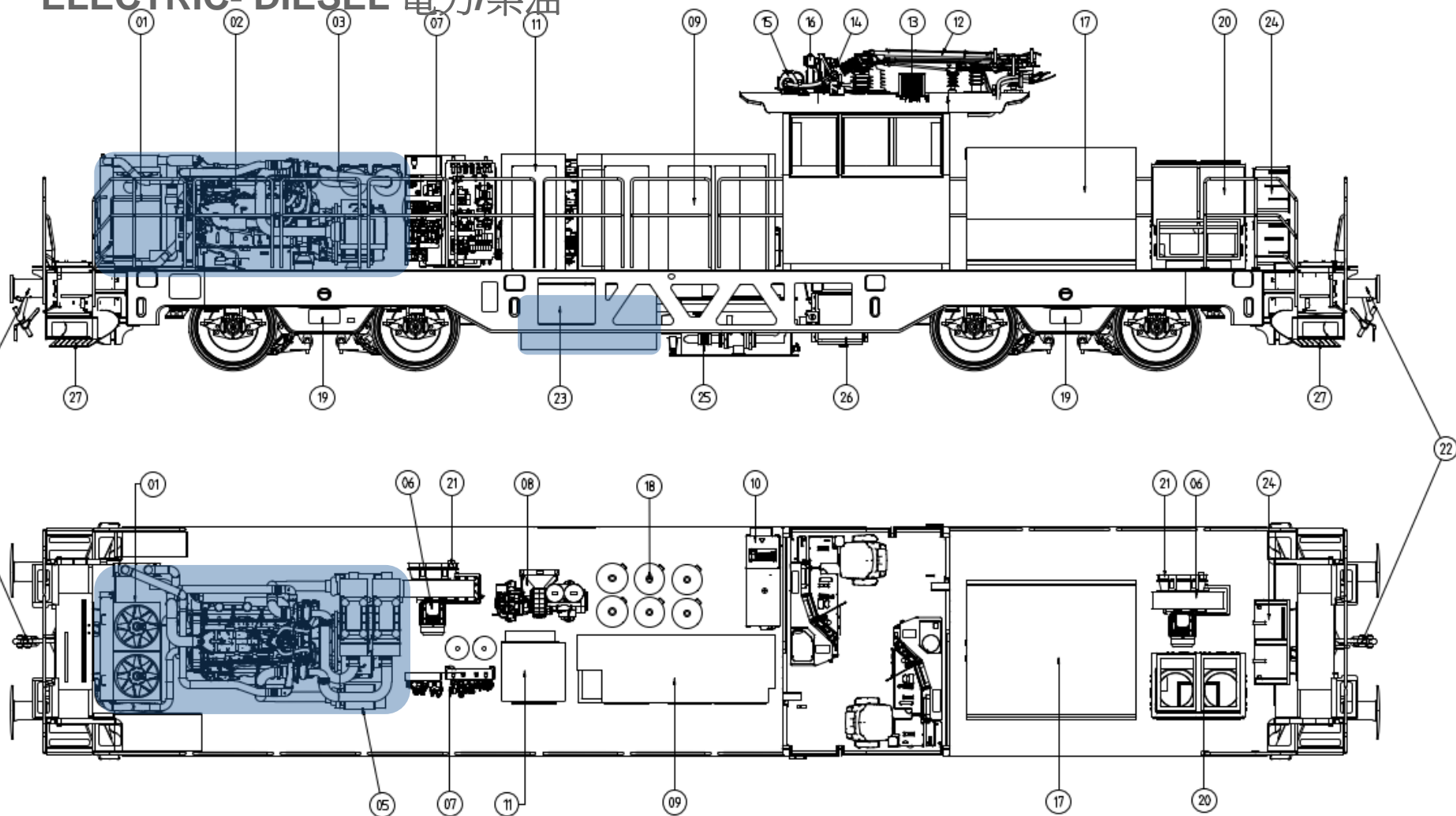


電力-柴油

SHUNTING AND LIGHT-TRAIN LOCOS 調車與輕量機車

MULTIPLE CONFIGURATION AVAILABLE 多種配置

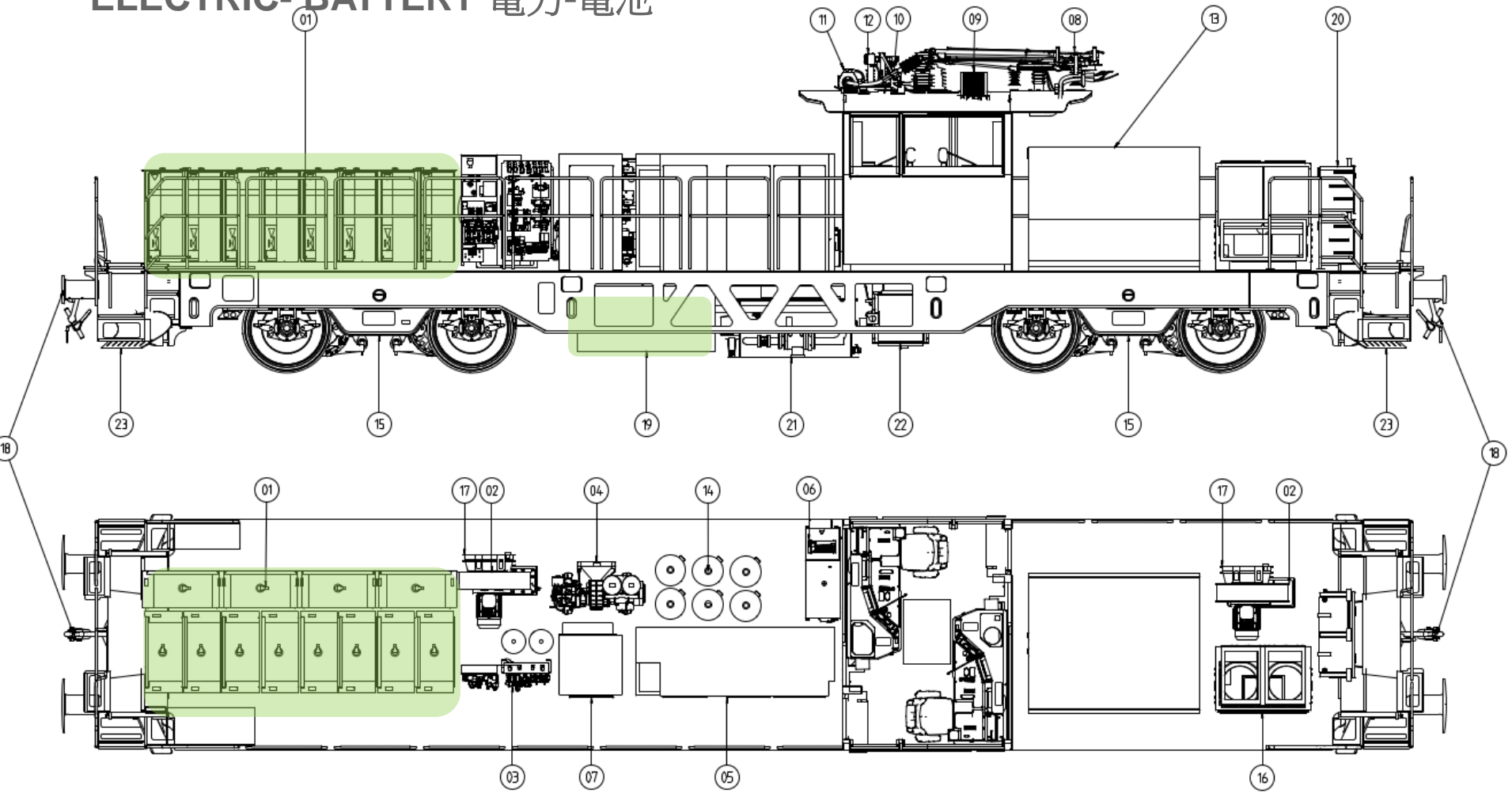
ELECTRIC- DIESEL 電力/柴油



SHUNTING AND LIGHT-TRAIN LOCOS 調車與輕量機車

MULTIPLE CONFIGURATION AVAILABLE 多種配置

ELECTRIC-BATTERY 電力-電池





CONCLUSION 總結

STADLER

CONCLUSION總結

WHAT'S NEXT? 後續?

Will TRA purchase new locomotives in the near/mid term?

請問貴局於近期或中期，是否有採購新機車之需求？

What about the option available as per supply agreement?

請問貴局是否會依據備註條款進行機車之增購？

What is the feedback of the proposal sent in July '22?

請問貴局對本公司於**2022年7月**機車增購的報價，是否有任何建議及想法？

Is TRA willing to explore with STADLER new generation of locomotives for service in Taiwán (hybrid-, dual- traction, etc.)?

請問貴局是否有意願採用施泰德最新一代機車（例如油電、混合動力等等）？

**THANK YOU
FOR YOUR ATTENTION**

感謝您的聆聽

STADLER