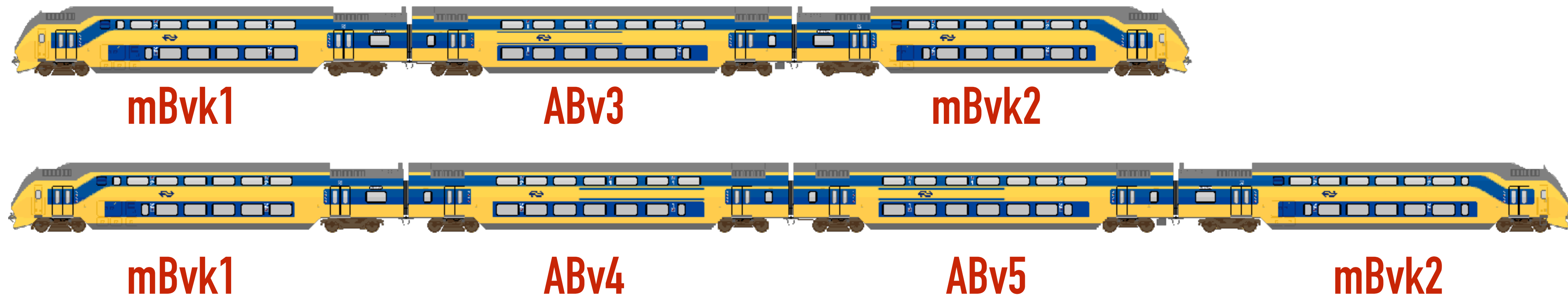


THE STORY OF VIRM

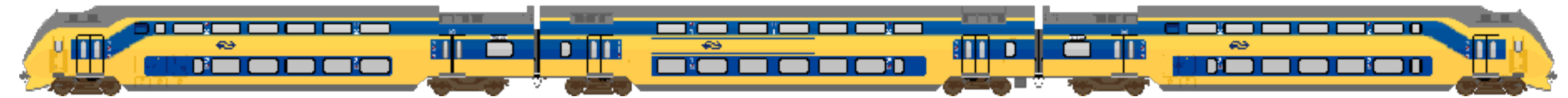
IT ALL STARTED WITH DD-IRM

- ▶ DubbelDeks InterRegio Materieel
- ▶ 3- and 4-couch Electric Multiple Unit
- ▶ 1994 - 1996, 34 + 47 units

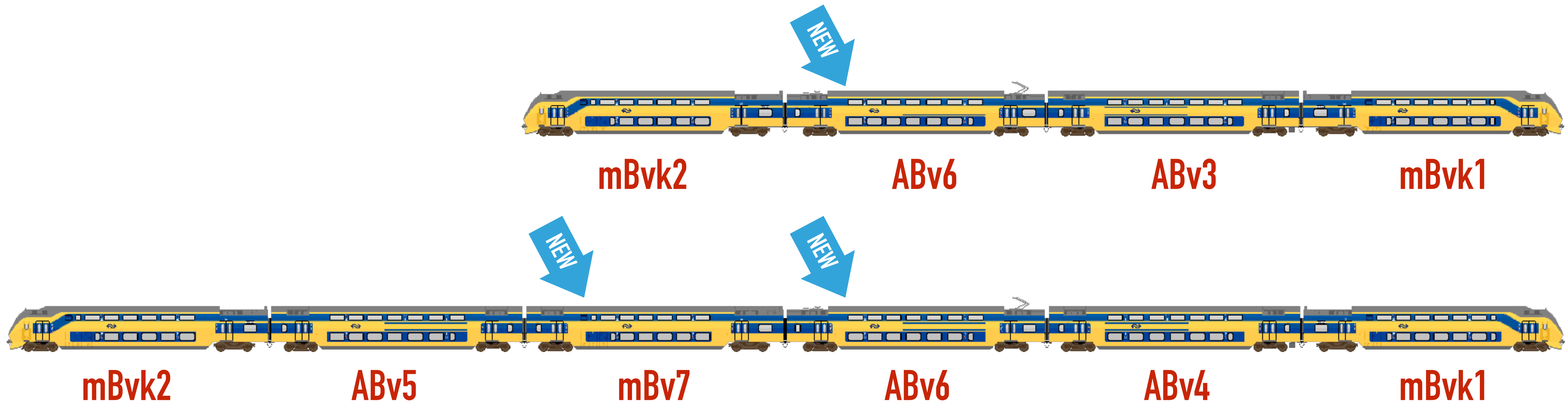
A 1st class
B 2nd class
m motor
v verdieping
k kabine



SINCE 2001, DD-IRM GOT LENGTHENED INTO VERLENGD INTERREGIO MATERIEEL



SINCE 2001, DD-IRM GOT LENGTHENED INTO VERLENGD INTERREGIO MATERIEEL

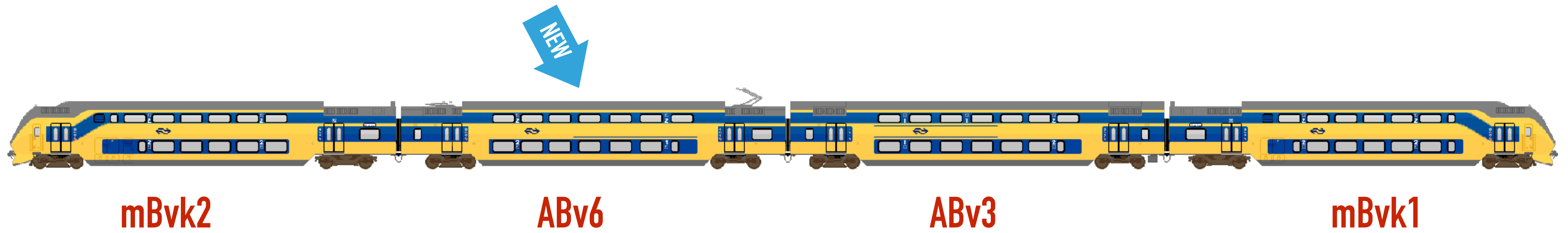




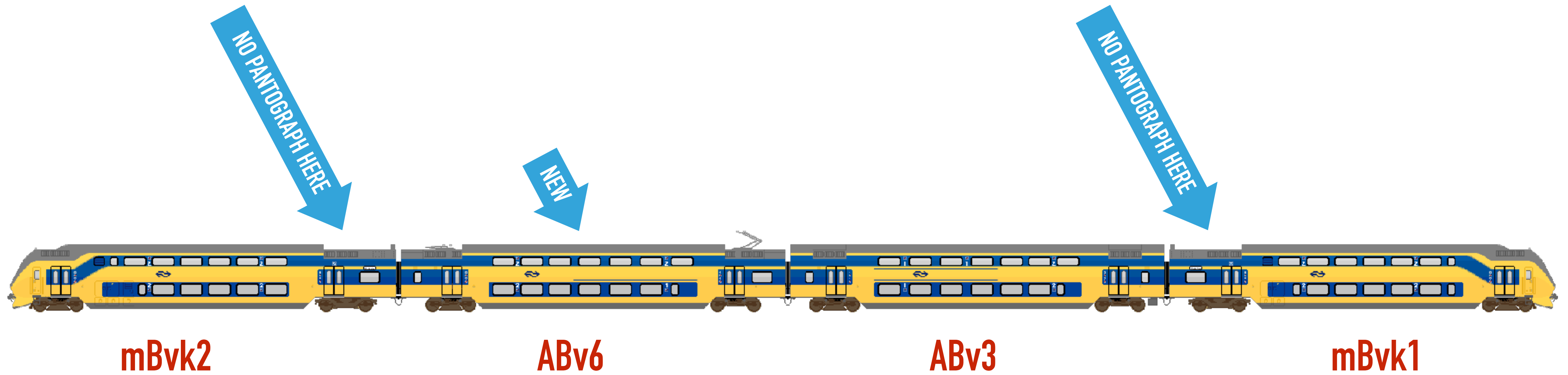
BUT WHY?

**Why take a newish train out of service just for lengthening?
Connecting more units seems a better idea.**

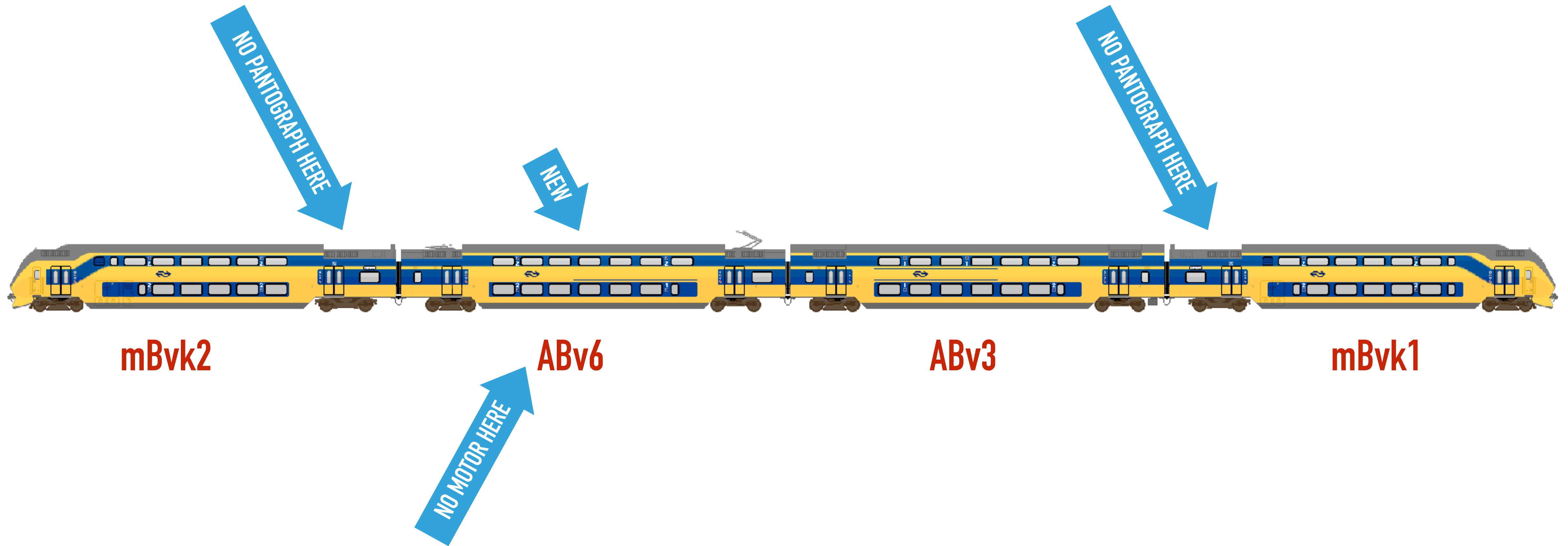
WAIT A MOMENT!



WAIT A MOMENT!

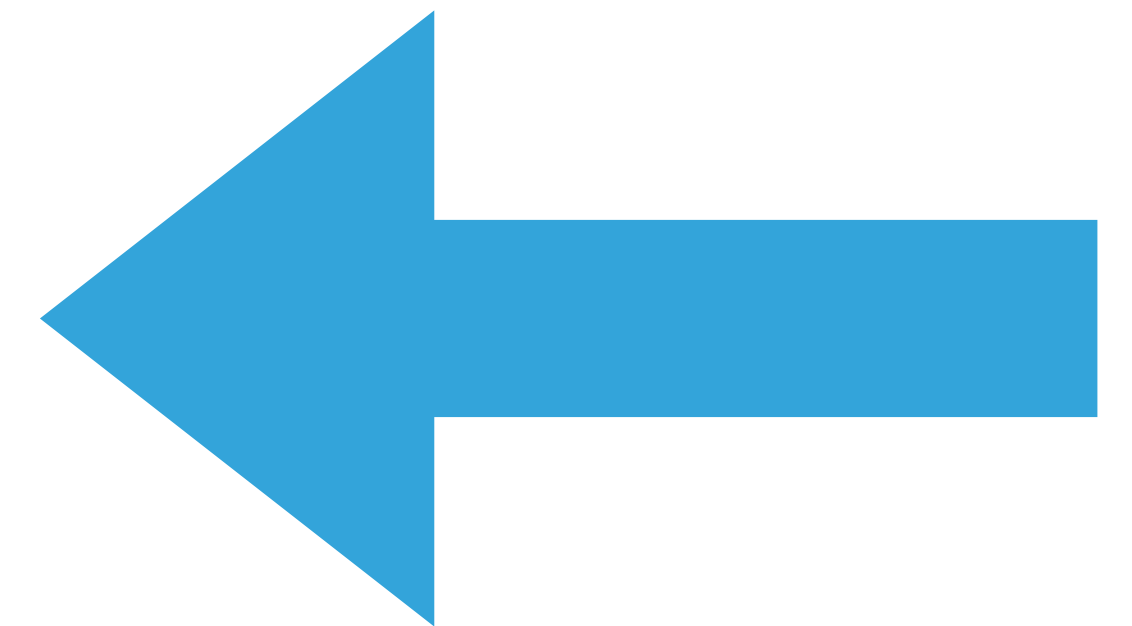


WAIT A MOMENT!

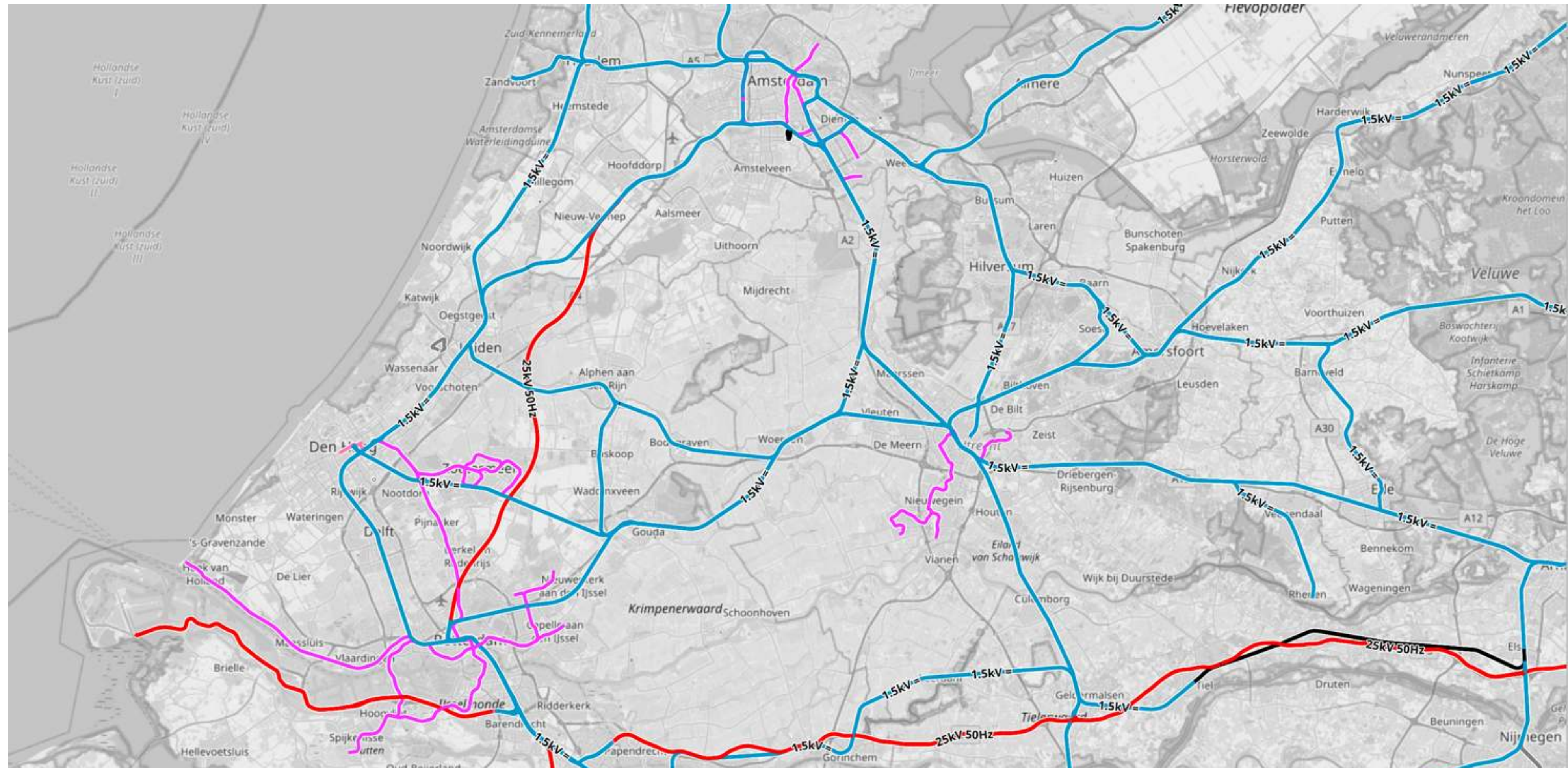


THE MAIN REASON BEHIND THE LENGTHENING OF DD-IRMS

Specifications	
Width	3020 mm ^[1]
Maximum speed	<ul style="list-style-type: none"> • 140 km/h (87 mph) (service) • 160 km/h (99 mph) (design)^[1]
Traction system	<ul style="list-style-type: none"> • DD-IRM: Holec GTO-VVVF • VIRM-2/3/4: Alstom Traxis IGBT-VVVF
Power output	2,388 kW (3,202 hp) (8600/8700) 1,592 kW (2,135 hp) (9400/9500)
Electric system	1.5 kV DC Catenary; all units have extra space for equipment to operate on 25 kV AC Catenary
Current collection	Pantograph
Track gauge	1,435 mm (4 ft 8 + ¹ / ₂ in) standard gauge



HIGH SPEED RAILWAY CANNOT RUN ON 1500 V DC



THE NOT SO HAPPY STORY OF

HIGH SPEED RAILWAY IN THE NETHERLANDS

THREE HIGH SPEED RAILWAYS WERE PLANNED

▶ HSL-Zuid

- ▶ Amsterdam - Rotterdam - Belgium

▶ HSL-Oost

- ▶ Amsterdam - Utrecht - Arnhem - Germany

▶ HSL-Noord (Zuiderzeelijn)

- ▶ Amsterdam - Lelystad - Groningen



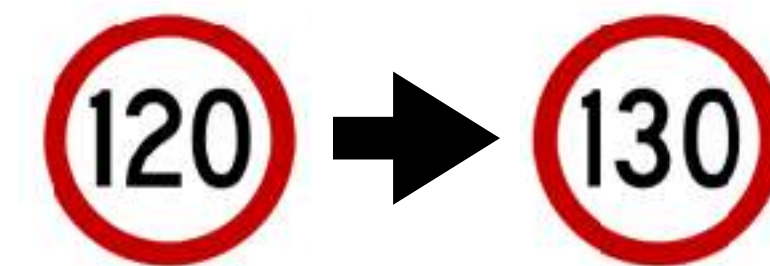
TWO HIGH SPEED RAILWAYS WERE CANCELLED



Not really true but let's not ruin the story with facts

TWO HIGH SPEED RAILWAYS WERE CANCELLED

Wroom
Democratie



Not really true but let's not ruin the story with facts

THE HIGH SPEED TRAIN FYRA WAS A DISASTER

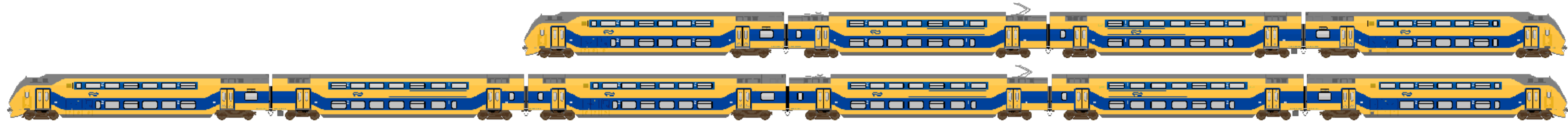
- ▶ **Temporary solution** with locomotives and old carriages running 160 km/h **lasted until 2023**
- ▶ VIRMs **never got equipped** for **25kV AC** operation



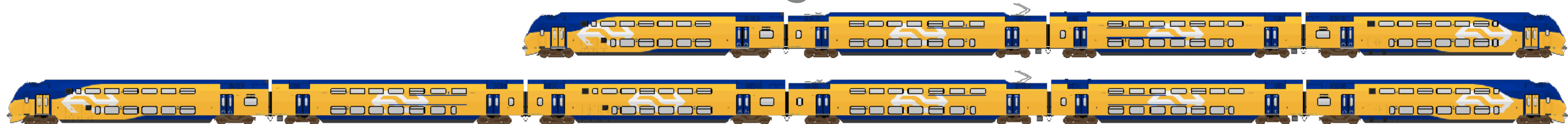
MORE VIRRM TO COME

AFTER EXTENDING ALL DD-IRMS, THREE MORE SERIES OF VIRM WERE MANUFACTURED

- ▶ **First series of 81** = 34 + 47 units got refurbished since 2015



- ▶ **Second series of 25** = 13 + 12 units got refurbished since 2021



- ▶ **Third series of 21** = 0 + 21 units got refurbished until 2023



- ▶ **Fourth series of 51** = 51 + 0 units is still in **original state**



THERE ARE ABANDONED LIFTS IN VIRM

- ▶ To support **on-board catering** from a trolley
- ▶ Service **abolished in 2003**
- ▶ The fourth series feature **wider staircases** and no lifts



THERE IS STILL FUTURE FOR VIRM

- ▶ First unit 8742 is getting equipped with **ETCS** Automatic Train Protection
- ▶ This will finally allow running at construction speed of **160 km/h**



Almeersespotter, TreinPosities.nl

QUESTIONS?

ONDŘEJ CALETKA

[HTTPS://ONDŘEJ.CALETKA.NL](https://ondrej.caletka.nl)

ONDŘEJ@CALETKA.CZ

NO TIME FOR QUESTIONS?

ONDŘEJ CALETKA

[HTTPS://ONDŘEJ.CALETKA.NL](https://ondrej.caletka.nl)

ONDŘEJ@CALETKA.CZ