



State of play of ERTMS deployment: recent progress track-side and on-board

16 October 2018, Valenciennes

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EC - DG MOVE

ERTMS Deployment – two approaches

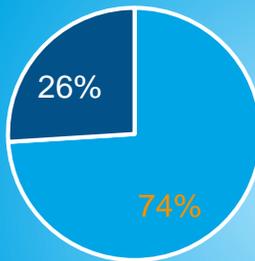
- Two ERTMS deployments:
 - per Core Network Corridors (CNC)
 - per Member States
- Two tools:
 - Corridor commitments via ERTMS European Deployment Plan, Regulation (EU) 2017/6 (EDP)
 - National commitments via National Implementation Plans (NIP), Regulation (EU) 2016/919 (CCS TSI)
- The role of the Rail Freight Corridors

ERTMS Deployment – CNC (I)

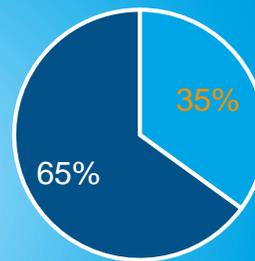


Today
5.733 km

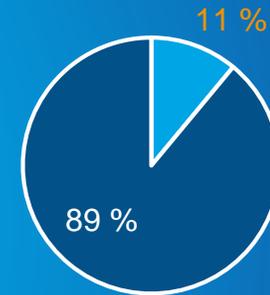
2019 target



2023 target



2030 target



□ ETCS in operation

ERTMS Deployment – CNC (II)

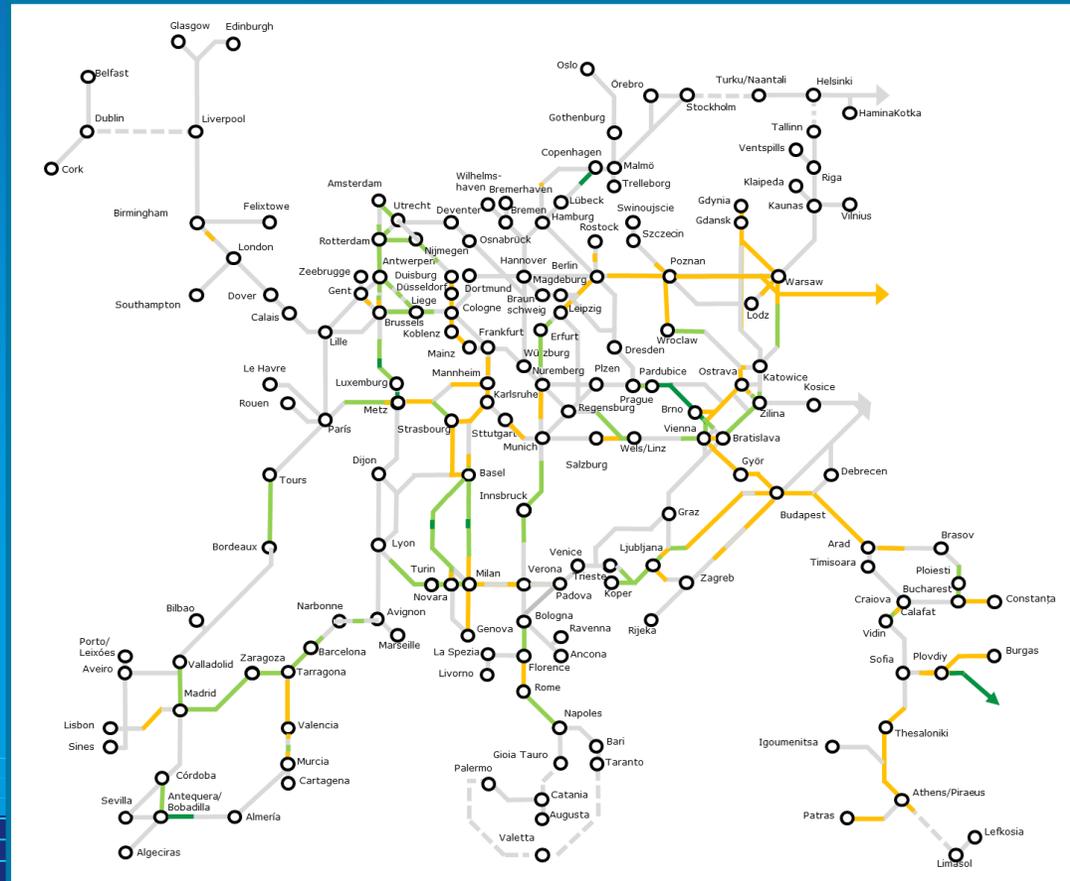




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ERTMS Deployment – CNC (III)

- No ETCS
- ETCS in operation
- ETCS in operation (recently)
- ETCS under construction



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ERTMS Deployment – CNC (IV)

KPI	Dec 2016	September 2018	September 2019	2023 (planned)	2030 (planned)
ETCS in operation	7% 3.775 km	10% 5.008,81 km	11% 5.733 km	31% 15.665,50 km	97% 49.806,46km
Compliance to EDP (2017)	-	75% 1.226,64 km	87% 1412,56 km	-	-
Compliance to EDP (2018)	-	31% 822.90 km	44% 1151,21 km	-	-
Compliance to EDP (2019)	-	-	0% 0 km	-	-

Compliance with EDP (2017)

87%

- Of the 1.630 km foreseen in the EDP for 2017, 1.412,56 km are in operation and 217,65 km are still delayed

Country	Km to equip in 2017	Km pending
Belgium	78,27	0,00
Bulgaria	213,94	56,17
France	307,98	0,00
Germany	177,74	61,90
Italy	49,15	21
Luxembourg	10,21	0,00
Slovenia	389,40	74,23
Switzerland	403,54	4,35

Compliance to EDP (2018)

44%

- Of the 2.619 km foreseen in the EDP for 2018, 328 km are in operation. Additionally there are 823 km that are in operation but being upgraded to B2 Level 2.
- 1.468 km are delayed

Country	Km to equip in 2018	Comment	Km pending
Czech Republic	267,15		0
Denmark	61,16		0
Hungary	384,75		384,75
Italy	288,40		288,40
Poland	383,21		383,21
Romania	411,68		411,68
Spain	822,90	Currently in operation with ETCS Level 1. To confirm status of ETCS Level 2	

Compliance to EDP (2019)

0%

- The 188,19 km foreseen in the EDP for 2019 are delayed till 2023.

Country	Km to equip in 2019	Comment	Km pending
Spain	188,91	Vitoria / Bergara/ Bilbao delayed till 2023 (170 km) Irún / Hendaya (Border ES/FR) Conventional not in included in ES NIP	188,91



Additional lines put in operation on the CNC in 2019:

- Around 120 km in ES: Antequera-Granada, initial target date 2020
- Around 4,5 km in BE: Namur - Ciney - Border BE/LU, initial target date 2022

Details per line

Country	CNC	Length (km)	Line	Comment	New target date
Bulgaria	OEM	50,76	Septemvri - Plovdiv		15/10/2019
Germany	SCM	61,9	VDE 8.1 Bamberg-Fuerth		Beyond 2023
Hungary	OEM – RDN	116,775	Szajol - Border RO/HU		2021
Hungary	MED - OEM – RDN	103,99	Budapest - Szajol		2021
Hungary	MED - OEM – RDN	9,586	Budapest node		2030
Hungary	MED	58,31	Székesfehérvár - Budapest Kelenföld		2021
Hungary	MED	96,092	Border SI/HU (Hodos) - Boba		2021
Italy	RALP	21	Domodossola-Novara	Partly in operation (Orta-Premosello) on 26/July 2019 and Premosello – Villadossola + Orta-Cressa 5/10/2019 (diversionary line) Domodossola-Villa + Cressa – Novara planned for 20/12/2019	December 2019
Italy	RALP	48,53	Chiasso - Milano		December 2020
Italy	SCM	236,35	Direttissima Roma - Firenze		June 2020 – December 2021
Italy	SCM	3,52	Firenze node		December 2021
Poland	BAC	350,404	Gdynia/Gdańsk – Warszawa		December 2019
Poland	BAC – NSB	32,807	Warszawa - Grodzisk Maz.		December 2020
Romania	OEM	0,724	Calafat - Border RO/BG	According to NIP	2025
Romania	RDN	219,065	București - Fetești - Constanța	According to NIP	2025
Romania	RDN	165,666	Simeria- Sighișoara	According to NIP	2025
Romania	OEM – RDN	26,222	Border RO/HU - Arad		December 2019
Slovenia	BAC-MED	74,234	Zidani Most <--> Pragersko	ETCS authorized but temporary out of use	2020
Spain	MED	458,498	Madrid – Lérida (HS)	In operation with L1	2019
Spain	ATL	178,507	Madrid - Valladolid	In operation with L1	2019
Spain	MED	185,899	Lérida – Barcelona (HS)	In operation with L1	2019
Spain	ATL	188,191	Vitoria-Bergara - Bilbao – border FR	According to NIP	2023
Switzerland	RALP	4,35	CB Basel	To confirm status	-

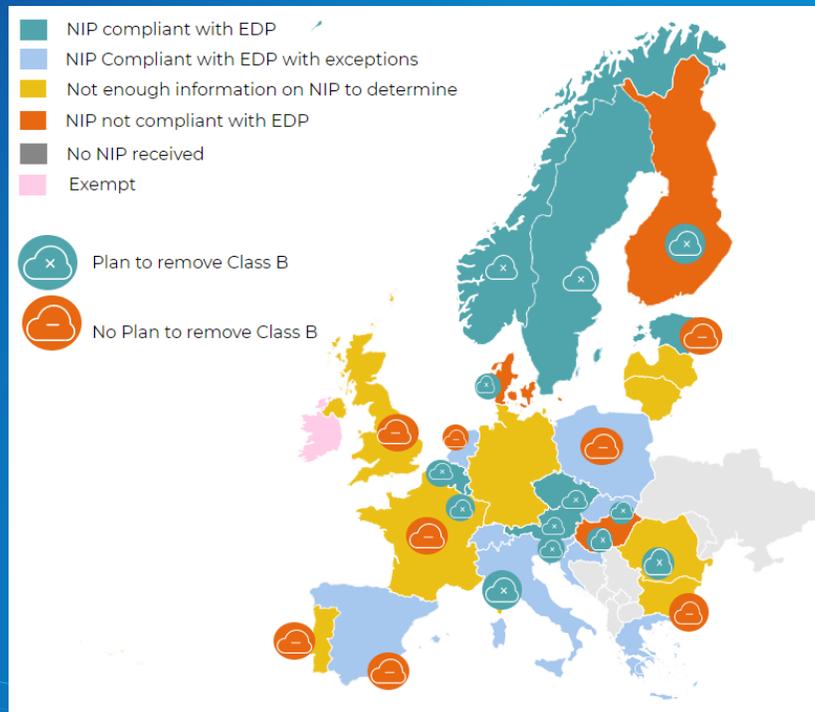
Actions for DMT/EC

Delayed but still before 2023

Delayed beyond 2023

In operation and then disabled

National Implementation Plans



All NIPs received

Level of compliance within the NIPs to the EDP is relatively high, including some networks where the expected dates are advanced

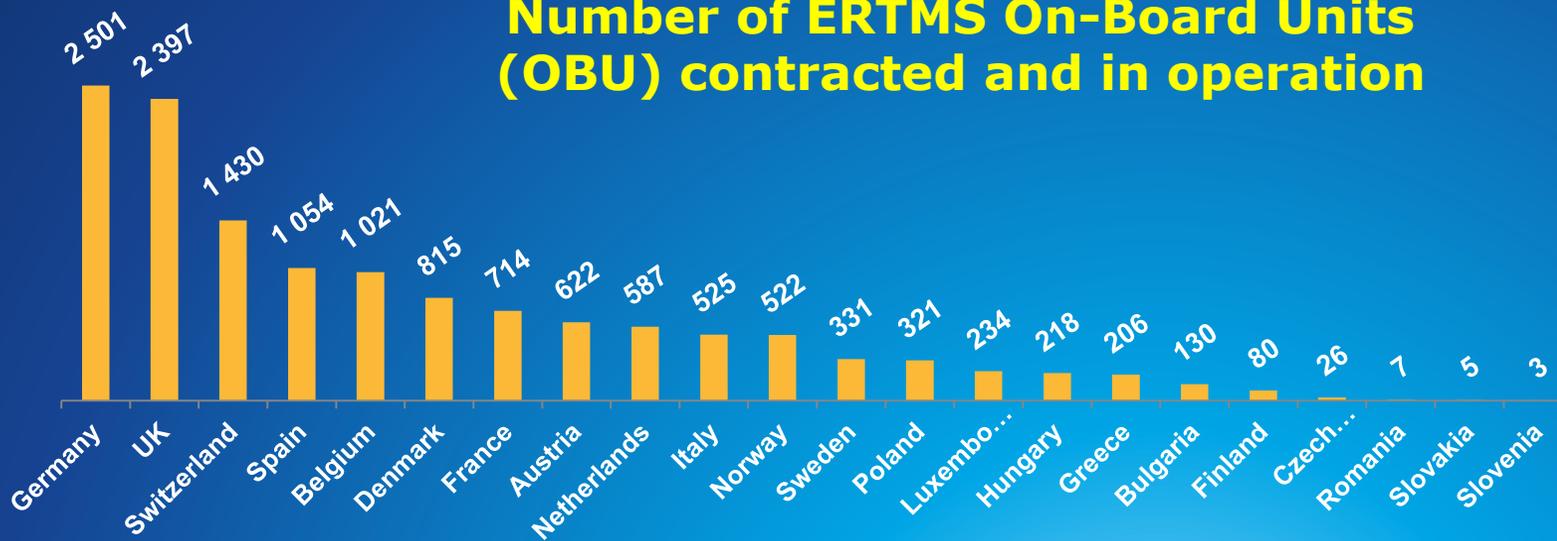
Some conclusions (I)

- The deployment was further delayed in 2018 and 2019
- Most of the delays do not exceed 2 – 3 years
- The vast majority of the pending lines are under construction
- In a number of cases the works have finished but the line is not in operation for various reasons

Some conclusions (II)

- Some Member States announced ambitious plans to deploy ERTMS nation-wide (e.g. BE, SE, recently DE and IT)
- Several early movers for nation-wide deployment delay the deployment (e.g. DK and NL); what undermines the business case for rolling stock retrofitting
- Others (e.g. BE, LU) are on track and intend decommissioning of class B systems but rolling stock in neighbouring countries is not ready yet
- Equipping just the corridor in most of the cases does not bring about sufficient benefits (objective: nation-wide deployment)

Number of ERTMS On-Board Units (OBU) contracted and in operation



- In Europe: 68% of Worldwide contracted OBUs (ETCS L1 &/or L2)
- 13,795 contracted OBUs (see breakdown on the left diagram)
 - ❖ 5,344 of whom in **Baseline 3**
 - ❖ **Approx. 2,288 OBU in BA3 are completed and/or in service**
 - ❖ **The remaining 3,056 to be delivered by 2028**

➤ Among 13,795 contracted OBUs:

- ❖ 5,827 OBUs refer to **NEW** projects
- ❖ 6,771 OBUs refer to **RETROFIT** projects
- ❖ 1,197 OBUs refer to **BOTH** projects or are not specified

➤ **Approx. 3,880 OBUs are completed and/or in service** (see breakdown on the right diagram) – 457 OBUs are not specified

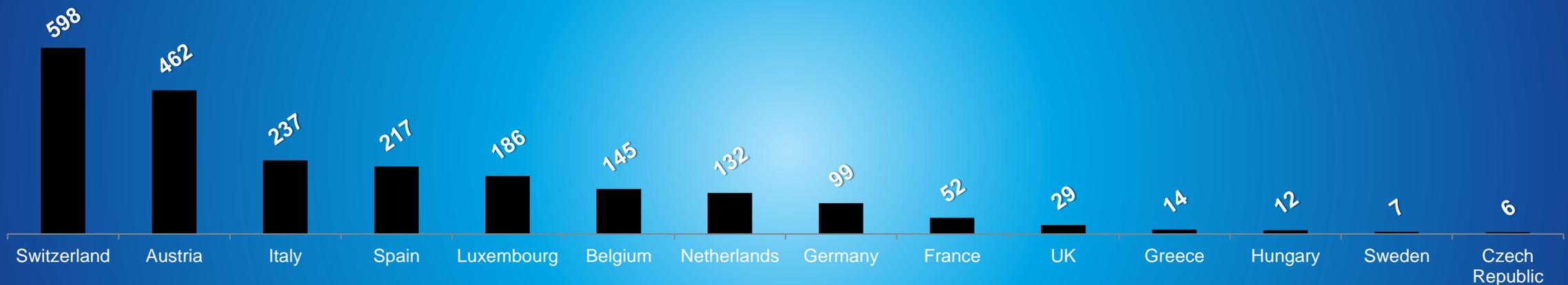
- ❖ **The remaining 9,458 OBUs are to be delivered by 2028**



Number of ERTMS On-Board Units completed (NEW or RETROFIT projects)



1. Breakdown of approx. 1,327 ERTMS On-Board Units (OBU) completed and/or in operation in Europe referring to NEW projects
(357 OBUs are not specified)

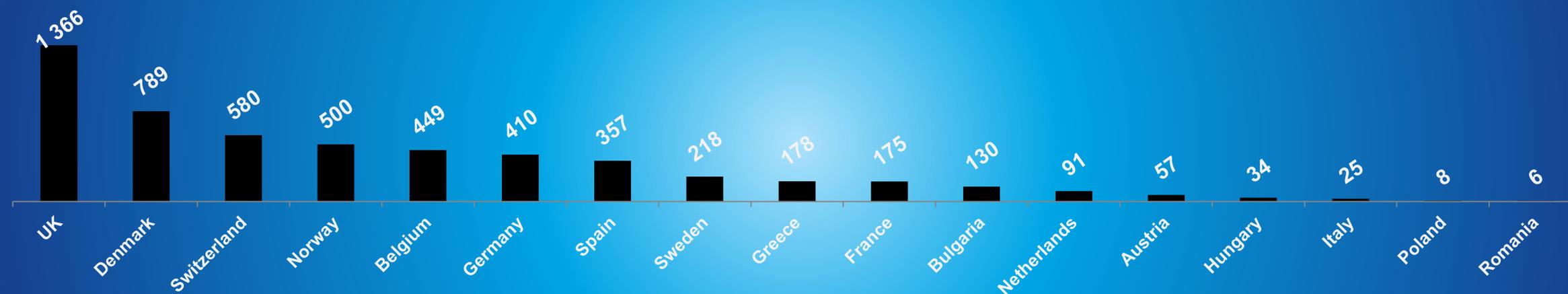


2. Breakdown of approx. 2,196 ERTMS On-Board Units (OBU) completed and/or in operation in Europe referring to RETROFIT projects
(357 OBUs are not specified)

Number of ERTMS On-Board Units contracted to be completed by 2028 (NEW or RETROFIT)



1. Breakdown of the 4,338 of ERTMS On-Board Units (OBU) contracted in Europe referring to **NEW** projects
(including 287 OBUs which refer to both)



2. Breakdown of the 5,373 ERTMS On-Board Units (OBU) contracted in Europe referring to **RETROFIT** projects
(including 287 OBUs which refer to both)



Thank you for your attention