

PARIS
2 ▶ 7
OCTOBER
2016 ▶ Pullman Bercy Hotel



INTERNATIONAL
RAILWAY SAFETY COUNCIL

Automated Train Operation on the Paris network

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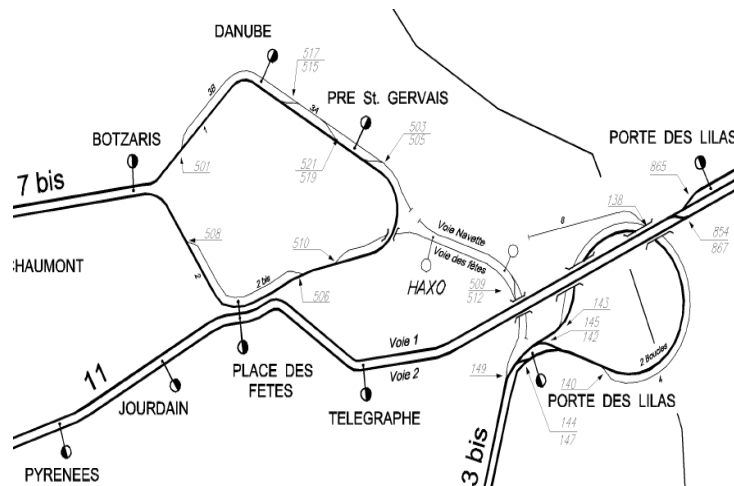
1. Overview of the Paris Metro's ATO systems



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Looking back in the 50's



1. Overview of the Paris Metro's ATO systems

1960

1980

1990

2010

2020



Track-side calculated GOA2 ATO



1. Overview of the Paris Metro's ATO systems

1960

1980

1990

2010

2020

14

1998: First GOA4 driverless UTO

1

2011: Line 1 GOA2 ATO replaced by driverless GOA4 UTO



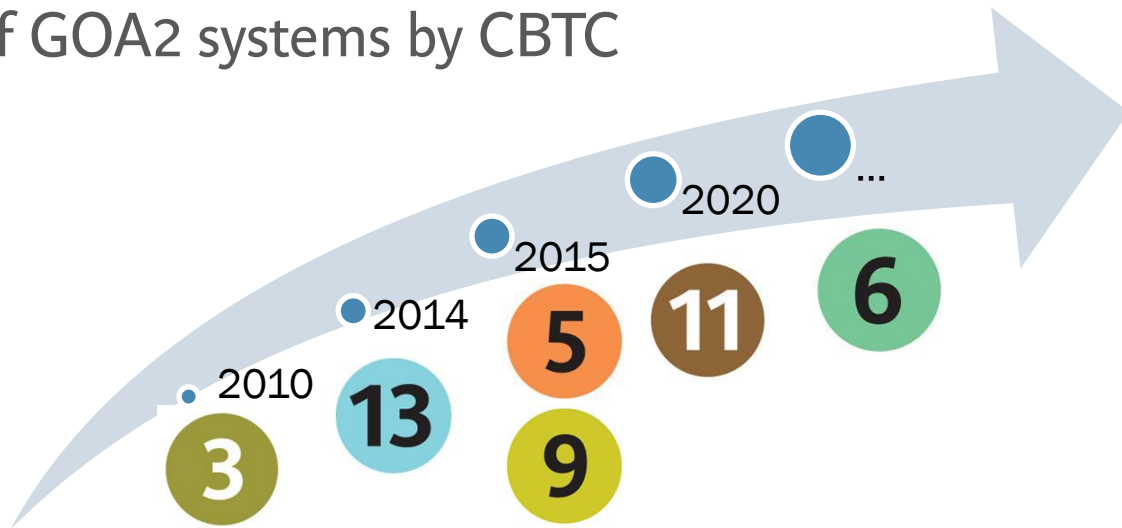
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1. Overview of the Paris Metro's ATO systems



Renewal of GOA2 systems by CBTC



1. Overview of the Paris Metro's ATO systems

1960

1980

1990

2010

2020

5 CBTC with
Cabsignal and
trackside signals
cancelation



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1. Overview of the Paris Metro's ATO systems

1960

1980

1990

2010

2020

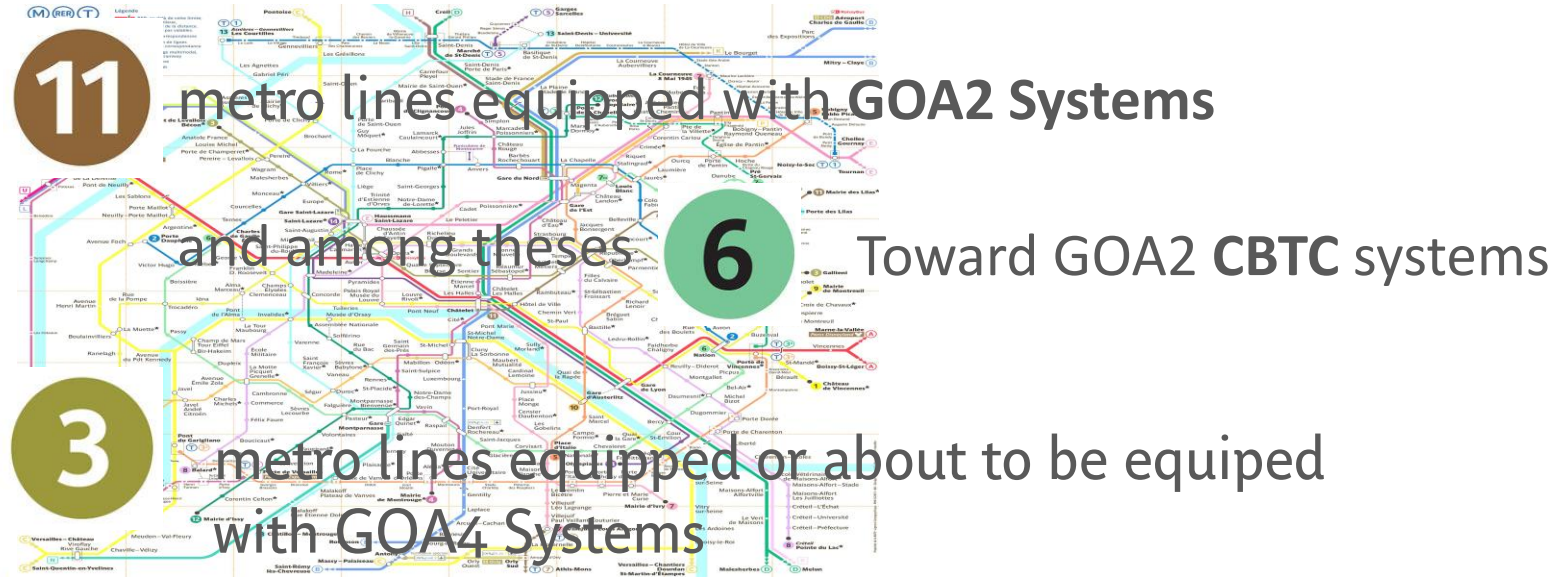
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Automatic Turn-back system at Châtillon terminus



1. Overview of the Paris Metro's ATO systems

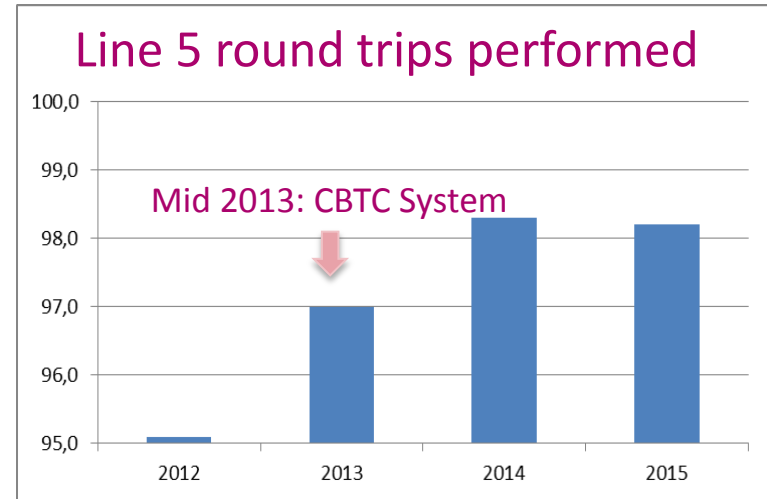
A network massively under ATO operation



1. Overview of the Paris Metro's ATO systems

ATO operation enhances line operation

- > - 7% running times
- > reduce speed variability between trains



2. ATO , drivers, and safety

Safety choices for ATO Systems at RATP : examples

- Automatic warning system to detect Drivers' malaise
- Transitioning from Manual to ATO mode when train at full stop
- 2 daily trips to be performed in manual mode
- Manual mode remains the nominal mode

2. ATO and safety

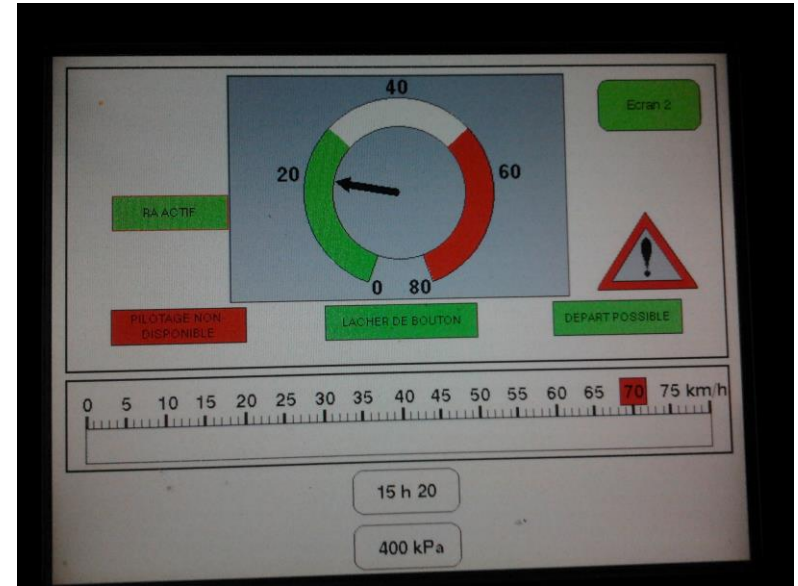
> Passengers exchange

- Rear viewing devices in all stations
- Automatic driving button to be pressed during the first 10s



2. ATO drivers alertness

> Transitioning towards CBTC systems



3. The UIC gauge network

> Introducing ATO on the UIC gauge network



> On-board ATO to be implemented on RER A Line by 2020

> Projects on RER B , ATO overlay over TCS (KCVP) and CBTC

3. The UIC gauge network

ATO safe operation expected to improve the practical performance

- > + 2% punctuality
- > + 5% operation speed

