

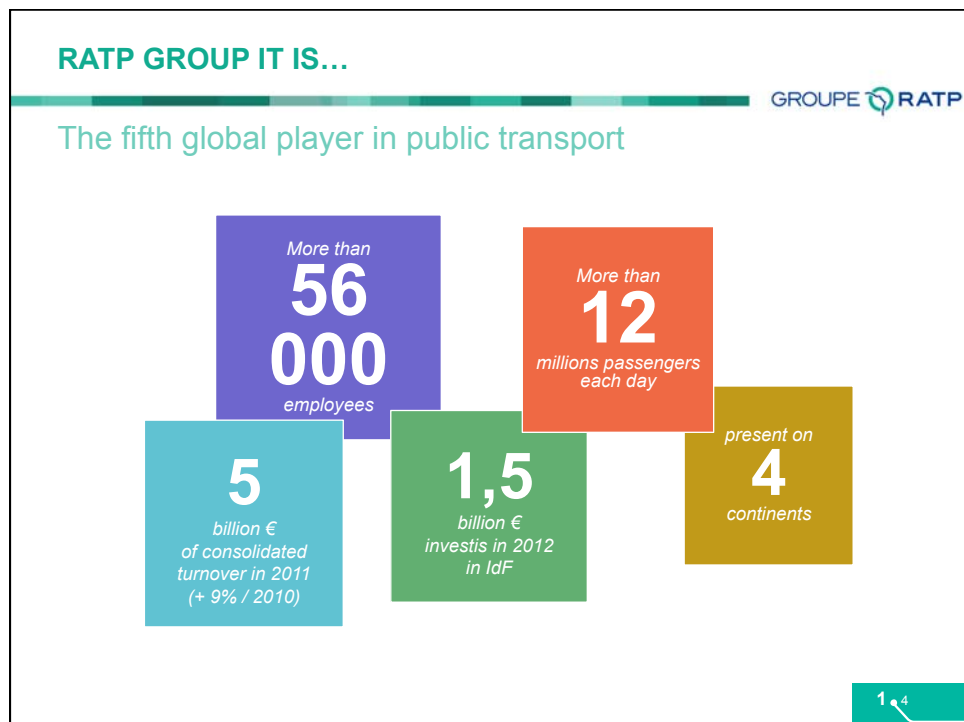
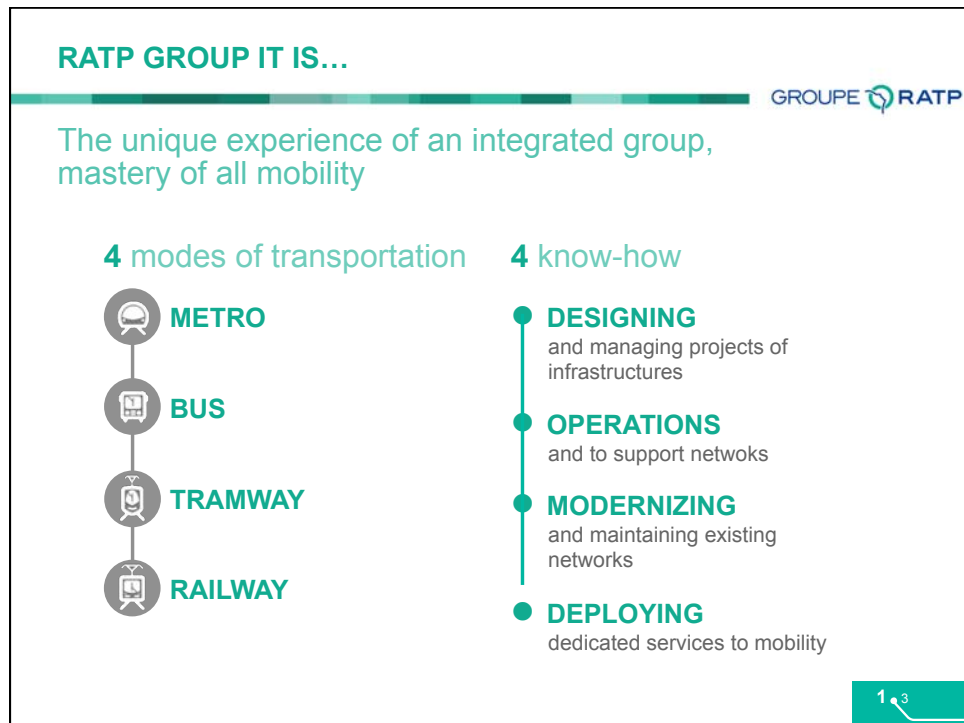


## SOMMAIRE

GROUPE RATP

**RATP** security approach for public transport system  
and for huge multimodal station it is...

- OVERALL RISK-BASED APPROACH
- MODELLING SECURITY STRATEGY
- SECURITY MEASURES
- NEW CAPABILITIES TESTING



RATP GROUP IT IS...



FOCUS

CHATELET-LES HALLES : A HUGE MULTIMODAL STATION



→ Crossing the main lines



→ Châtelet-Les Halles



→ Right in the heart of the city

RER LINES :

Lines A, B, D.

METRO LINES :

Lines 1, 4, 7, 11, 14

BUS LINES :

Many night and day lines

1.5

RATP GROUP IT IS...



FOCUS

*Important shopping mall integrated in the multimodal station*

*More than 750.000 passengers each day*



→ 70's station



→ Cross tracks



→ The RER station

1.6



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## OVERALL RISK-BASED APPROACH

### Why a risks-based approach

- Expected benefits by reducing risks :
- Improve PT attractiveness for passengers
- Reduce transportation service unavailability
- ... depending on PTO's risks acceptance

2.8

OVERALL RISK-BASED APPROACH

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Risks Identification

FROM MINOR THREAT

TO MAJOR THREAT

FROM HUMAN TARGET

TO INFRASTRUCTURE TARGET



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OVERALL RISK-BASED APPROACH

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Risks Estimating

CRITICITY = OCCURENCE \* IMPACT

OCCURENCE

- Security statistics
- Knowledge of the site

IMPACT

- Human and environmental
- Financial
- Media

	Passengers	Trains	Stations
Incivilities			
Destroying			
Crime			
Terrorism			

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MODELLING SECURITY STRATEGY

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SECURITY STRATEGY

For each risk :	Prevention	Protection	Safeguard
Attacker	Priority 1		
Threat	Priority 3	Priority 1	Priority 1
Target	Priority 2	Priority 1	Priority 1

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## MODELLING SECURITY STRATEGY

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### RISKS ASSESSMENT

- For each risk, what are the vulnerabilities depending on :
  - Intention of the attacker
  - Attacker action mode
  - General and security features of the infrastructure

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## MODELLING SECURITY STRATEGY

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### MITIGATION : SECURITY CAPABILITIES

- **New RATP approach in progress : resilience principles**
  - Resistance : ability of the system to reduce threats
  - Robustness : intrinsic ability of the system to withstand shocks
  - Reactivity : ability to analyse, collect, process information and to mobilize means
  - Redundancy : ability to ensure fonctionnal redundancy for business continuity
  - Rapidity : ability of the system to find an acceptable state

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MODELLING SECURITY STRATEGY

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CAPABILITIES DESIGN

	Resist.	Robust.	Reactivity	Redund.	Rapidity
Prev.	Com.		Training		Training
Prot.		Physical security	SCC		First responders
Safeg.				Backup	Layout

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Rapprocher notre expertise  
des attentes clients

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4



## SECURITY MEASURES

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### Measures categories

- HUMAN
- ORGANIZATIONAL
- TECHNICAL



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## SECURITY MEASURES

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### Reactivity measures

- Knowing that something happens
- Knowing where that is going
- Knowing what happens
- Knowing what solutions are possible
- Coordinating the response resources

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## SECURITY MEASURES

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### Measures assessment

- **Ethical compliance**
  - Private data protection rules
  - PTO ethical policy
- **Costs-benefits analysis**
  - Cost of technology in mass transit system
  - Difficulty to design a business case
- **Societal and cultural acceptance**
  - Staff acceptability
  - Passengers acceptability

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## Rapprocher aujourd'hui et demain

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## BRINGING TOGETHER PRESENT AND FUTURE

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### RATP group: driving innovation

#### ● EXPERIMENTAL STATION :

Explosive detection in Bibliothèque François Mitterrand station



#### ● SECUR-ED : FP7 research project



#### ● SECUREMETRO : THE ROLLING STOCK OF THE FUTURE



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## RECOGNIZED SECURITY EXPERTISE

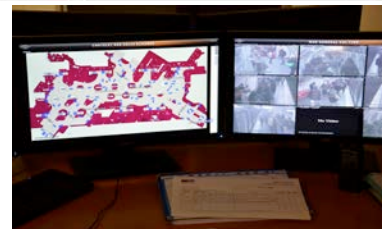
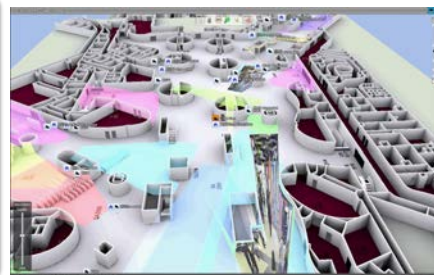
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### FOCUS

#### MULTIMODAL SECURITY MONITORING CENTER

*Based on security sub-systems*

- Access monitoring
- CCTV monitoring
- Alarms monitoring
- Proactive detection



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BRINGING TOGETHER PRESENT AND FUTURE



RATP group: **commisioning**

- **INTEGRATION**  
FOR EACH SUB-SYSTEMS



- **QUALIFICATION :**  
FOR EACH SUB-SYSTEMS, AND FOR EACH SYSTEM



- **RECEPTION :**  
FOR THE WHOLE SYSTEM



Security innovation projects : **Testing**  
**complies with planned commisioning**  
**procedures in projects management**  
**guide**

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THANK YOU FOR YOUR  
ATTENTION

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